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ABSTRACT

These proceedings begin with the schedule, conference committee membership lists, and detailed agenda of the 1997 conference of the Academy of Human Resource Development, which explored the future of human resource development (HRD). Presented next are papers on HRD from scholars affiliated with organizations from 12 countries. The papers are grouped by the conference's 34 symposium topics: university instruction in HRD; evaluation in HRD; strategic HRD; international HRD perspectives; informal workplace learning; enhancing team performance; research issues in HRD; adult learning in the workplace; changing organizational forms; instructional technology; work analysis and expertise; work force issues facing HRD; essential competencies for internal and external organizational development consultants; transfer of learning; learning organization practices; university HRD programs; HRD and performance outcomes; contextual learning issues; organization development and change; integrity in HRD; assessing the learning organization; leadership and executive development; advancing the profession through journals; charting the future of HRD; measurement and research tools; the purpose and place of HRD; global HRD; motivation to learn and perform; enhancing individual readiness; linking HRD practice and research; career issues in organizations; performance improvement processes; management development; assessing employee skills; and individual learning issues. (MN)

ED 428 188

AHRD

ACADEMY OF HUMAN RESOURCE DEVELOPMENT

1997 Conference Proceedings

March 6-9, 1997
Atlanta, GA

BEST COPY AVAILABLE

Conference Chair:
Elwood F. Holton III
Louisiana State University

Proceedings Editor:
Richard J. Torraco
University of Nebraska

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From the Editor

Welcome to Atlanta! These are exciting and challenging times for the human resource development profession, and for the Academy of HRD in particular. Yet, as this proceedings will attest, we continue to meet the challenge to the Academy: to lead the HRD field through research. The work presented here—123 papers from 164 scholars affiliated with organizations from 12 countries—is among the finest research available in the field today. I am sure you will be stimulated the scholarly debate and dialogue these papers will generate.

Enjoy the conference and the proceedings. Please give us your feedback and ideas for improvement so that we can make next year conference even better. Take a minute to review the following tips on using the proceedings.

Tips on Using the Proceedings

1. Papers are grouped by symposium number. Symposium numbers can be found in the Conference Program immediately following this note.

2. Only those sessions in the Conference Program that have a number to the left of the title have papers included. There are no papers for the keynote, breakfast or lunch sessions.

3. Two page numbers are indicated on each paper.
    - At the bottom of the page is a combination of symposium number and paper within each symposium (e.g., 2-1 is the first paper in symposium number two). This format allows you to locate papers easily for each symposium during the conference.
    - At the top of the page are sequential page numbers. These page numbers will enable you to cite proceedings papers more easily in the future.

4. "Table of Contents" for the proceedings is the Conference Program.

5. An *Index to Authors* and an *Index to Keywords* appear at the end of the proceedings.

My sincere thanks to all the authors for their fine work and cooperation with me in producing this volume.

Rick J Torraco

Richard J. Torraco
Proceedings Editor

BEST WISHES

TO THE

ACADEMY OF
HUMAN RESOURCE DEVELOPMENT
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1997 CONFERENCE PROGRAM

Terrace Garden Hotel ◆ Atlanta, GA ◆ March 6 - 9, 1997

AHRD

The Academy of Human Resource Development
P. O. Box 25113
Baton Rouge, LA 70894 USA
(504) 334-1874, Fax (504) 334-1875, office@ahrd.org

Overview of the 1997 Conference

Conference Theme: "Futures of HRD"

	Thursday, March 6	Friday, March 7	Saturday, March 8	Sunday, March 9
7:00-8:15 am	**Pre-conferences:** Wednesday, March 5, noon through Thursday March 6, noon **LEARNING through HRD (IFAL)** **PERFORMANCE through HRD** **INTEGRITY through HRD** **HRD Emerging Research Course**	• AHRD Committee Breakfasts • Food-N-Thought Discussion & Meal Groups, join in! • NAITTE Breakfast	• AHRD Committee Breakfasts • Food-N-Thought Discussion & Meal Groups, join in! • AVERA Breakfast	• AHRD Board Meeting • Food-N-Thought Discussion & Meal Groups, join in!
8:30-10:00 am		*–Keynote Presentation–* **Louis van der Merwe** Managing Director, Centre for Generative Leadership *DESIGNING HRD STRATEGIES: USING SCENARIOS FOR THE FUTURE*	*–Keynote Presentation–* **Sam Stern**, Oregon State Univ. *BUILDING CORPORATE CREATIVITY THROUGH HRD*	SYMPOSIUMS • Career Issues in Org • Performance Improvement Processes • Management Development • Assessing Employee Skills • Individual Learning Issues
10:30-12:00		*EXHIBITORS OPEN* SYMPOSIUMS • University Instruction in HRD • Evaluation in HRD • Strategic HRD • International HRD Perspectives • Informal Workplace Learning	SYMPOSIUMS • University HRD Programs • HRD & Performance Outcomes • Contextual Learning Issues • OD and Change • Integrity in HRD	*–Keynote Presentation–* **Craig J. Russell**, U. of OK J.C. Penney Chair of Leadership *BREAKING DOWN THE WALLS IN HRD RESEARCH AND SCHOLARSHIP*
12:00 noon	Conference Registration Opens 12:00-5:00 AHRD Board of Directors Meeting 2:00-5:00 AHRD Committees Ongoing- Showcase of Host Universities, U. of Georgia and Georgia State (computer kiosk) 2-5:00pm Visit the Georgia Tech Graphics, Visualization, and Usability Center	• Food-N-Thought: Discussion and Meal Groups, join in! • Committee Meetings	• Food-N-Thought: Discussion and Meal Groups, join in! • Committee Meetings	12:00-1:00pm AHRD Business Meeting for all Academy members
1:30-3:00 pm		SYMPOSIUMS • Enhancing Team Performance • Research Issues in HRD • Adult Learning in the Workplace • Changing Organizational Forms • Instructional Technology	SYMPOSIUMS • Assessing the Learning Org. • Leadership & Executive Dev. • HRD Journals • Charting the Future of HRD • Measurement & Research Tools	Lunch & hotel checkout 1-2:00pm AHRD Board of Directors Mtg
3:30-5:00 pm		SYMPOSIUMS • Work Analysis & Expertise • Workforce Issues Facing HRD • Competencies of OD Prac. • Transfer of Learning • Learning Org. Practices	SYMPOSIUMS • Purpose and Place of HRD • Global HRD • Motivation to Learn & Perform • Enhancing Indiv. Readiness • AHRD Global 100 Talks to Researchers	
Evening	6-7:00pm Grand Reception & Conference Overview 7-8:30pm HRD Town Forum *LEADING HRD THROUGH RESEARCH*	FREE EVENING 5:30-6:30 Reception for HRD Graduate Students 6:00pm HRDQ Editorial Board Mtg. & Dinner 6:00pm Global 100 Mtg. & Dinner	6:00-9:00pm President's Reception & Dinner for all conference attendees (included in registration)	

IN APPRECIATION

Dear Academy Members,

A special thank you to the following volunteers for their contributions to the 1997 AHRD Conference! It is my sincere hope that the list is complete. Please take a moment to extend your gratitude to these fine professionals who have made this wonderful event possible.

Best Regards,
Ed Holton
Chair, 1997 AHRD Conference

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AHRD

Academy of Human Resource Development

The Academy of Human Resource Development was founded May 7, 1993. The Academy was formed to encourage the systematic study of human resource development theories, processes, and practices, to disseminate information about HRD, to encourage the application of HRD research findings, and to provide opportunities for social interaction among individuals with scholarly and professional interests in HRD, from multiple disciplines and from across the globe.

Presidents

1993-4	R. Wayne Pace, Brigham Young University
1994-6	Karen E. Watkins, University of Georgia
1996-8	Richard A. Swanson, University of Minnesota

Outstanding Academic Program Award

1994	University of Minnesota
1995	University of Twente
1996	Not given

Outstanding Scholar Award

1994	Fred Otte, Georgia State University
1995	Ronald L. Jacobs, Ohio State University
1996	Victoria J. Marsick, Columbia University

AHRD Annual Conferences

1993	Chartering conference
1994	San Antonio
1995	St. Louis
1996	Minneapolis
1997	Atlanta
1998	Chicago
1999	Amsterdam

ROOM LEGEND FOR THE 1997 CONFERENCE

Terrace Level

Terrace-E = Terrace Ballroom East
Terrace W = Terrace Ballroom West
Dogwood = Dogwood Room
Magnolia = Magnolia Room
Camellia = Camellia Room
Rosewood = Rosewood Boardroom

Lobby Level

Sunflower = Sunflower Room
Cascades = Cascades Lobby Area
Cafe III = Cafe Restaurant, Upper Level

Atrium/Health Club Level - 4th Floor

Atrium Ballroom
Atrium Courtyard

WEDNESDAY, MARCH 5
Pre-conference Activities

8:30am to 8:00pm **CONFERENCE CENTRAL AND REGISTRATION OPEN** *Terrace Level Hall*

10:00-12:00 **Refresher on Action Learning Concepts and Practice** *Dogwood*
International Federation for Action Learning (IFAL)
Chair: Michael Marquardt, George Washington University

Need an introduction or a quick refresher on Action Learning? Join this session to review key concepts and practices of Action Learning.

1:00-5:00 **PRE-CONFERENCE - Learning through HRD** *Dogwood*
International Federation for Action Learning (IFAL)
Chair: Judy O'Neil, Northeast Training Services, IFAL President

This pre-conference will combine concepts of Action Learning with that of Open Space to create an opportunity for participants to explore Action Learning by working on a challenge or problem with a group of colleagues. Part of the process is also to examine how the group and its members can move beyond pre-existing limits of thought and perspective while the group is engaged in Action Learning.

1:00-5:00 **PRE-CONFERENCE - Performance through HRD** *Camellia*
Chair: Richard J. Torraco, University of Nebraska
ISPI/AHRD Research Grant Award Recipient

Join this group to discuss aspects of building performance through HRD, including: Models of Human Performance, Best Practices in Performance Improvement, Dynamics of Performance at Different Levels of Analysis, Roundtable Discussion with Business Representatives on Human Performance, Methodological Approaches to Studying Human Performance and more.

1:00-5:00 **PRE-CONFERENCE - Integrity through HRD** *Magnolia*
Chair: Neal Chalofsky, George Washington University

The purpose of the pre-conference is to bring together a community of scholars and practitioners to explore issues such as the ones above from both a personal and professional perspective, and to establish a foundation for continuing and expanding future pre-conferences on this theme.

WEDNESDAY, MARCH 5
Pre-conference Activities

1:00-5:00 **HRD EMERGING RESEARCH COURSE (HRD 5770)** *Sunflower*

Facilitator: Gary N. McLean, University of Minnesota

Special course available for graduate credit from the University of Minnesota in conjunction with the conference. Course will examine the role of research in HRD, emerging themes, criteria for evaluating HRD research, critique of past and future research presentations, and the role of professional organizations in HRD. Interested persons must register for the course and pay tuition in addition to registering for the conference. Limit: 25 persons. Register at conference central

7:00 **IFAL Pre-conference Dinner** *Cafe III*

AHRD Salutes Our Partners

Our special thanks to these outstanding organizations who have joined
with AHRD to help lead HRD through research

American Society for Training and Development
Berrett-Koehler Publishing
Business Outreach
EURESFORM
International Society for Performance and Instruction
International Federation for Action Learning
Jossey-Bass Publishers
Routledge Press
University Forum for HRD

THURSDAY, MARCH 6
Pre-conference Activities

7:00am to 8:00pm	CONFERENCE CENTRAL, REGISTRATION, AND EXHIBITS OPEN	*Cascades*
8:00- 5:00	**HRD EMERGING RESEARCH COURSE (HRD 5770) continued** **Facilitator: Gary N. McLean, University of Minnesota**	*Sunflower*
8:00- 12:00	**PRE-CONFERENCE - Learning through HRD continued** **International Federation for Action Learning (IFAL)** **Chair: Judy O'Neil, IFAL President**	*Dogwood*
7:15- 12:00	**PRE-CONFERENCE - Performance through HRD continued** **Chair, Richard J. Torraco, University of Nebraska**	*Camellia*
8:30- 12:00	**PRE-CONFERENCE - Integrity through HRD continued** **Chair: Neal Chalofsky, George Washington University**	*Magnolia*
12:00- 2:00	**Lunch on your own**	
12:00- 5:00	**AHRD Board of Directors Meeting**	*Rosewood*
2:00- 5:00	**AFTERNOON WARM-UPS**	

Visit the Georgia Tech Graphics, Visualization, and Usability Center, 2:00 - 5:00 pm register at conference central

Site Host Showcase - continuous touch-screen kisok to learn about Georgia State University and the University of Georgia, your site hosts. Also learn about the Academy of HRD web-site.

THURSDAY, MARCH 6

MAIN CONFERENCE OPENS

6:00-7:00 **Opening Reception** — *Atrium Courtyard*

All registered attendees are invited

7:00-8:30 **HRD Town Forum - An AHRD Tradition** — *Atrium Ballroom*

HRD Research: Is Anyone Listening?

Gary N. McLean, Univ. of Minnesota

Integrating the Art and Science of HRD

Michael Leimbach, Wilson Learning Corp., AHRD Global 100 member

Facilitator: Catherine M. Sleezer, Oklahoma State University

FRIDAY, MARCH 7

7:00am to 6:00pm **CONFERENCE CENTRAL, REGISTRATION, AND EXHIBITS OPEN** *Cascades*

7:00-8:15 **Breakfast Food 'n Thoughts** Pull up a chair to meet and dialogue with any one of these groups *Cafe III*

National Association of Industrial and Technical Teacher Educators (NAITTE) Meeting (open to anyone)
Facilitator: Roger Hill, NAITTE Secretary

Book Review*: HRD Research Handbook*, R. Swanson & E. Holton, Editors
Facilitators: Pat Inman, Northern Illinois University and Ronald L. Jacobs, Ohio State University

Book Review*: Improving Training Effectiveness in Work Organizations*, K. Ford, S. Kozlowski, K. Kraiger, E. Salas, M. Teachout
Facilitators: Sandy Kaiser & Annette Bookter, Louisiana State University

8:30-10:00 **Keynote Presentation** *Atrium Ballroom*

Louis van der Merwe
Managing Director, Centre for Generative Leadership
"DESIGNING HRD STRATEGIES: USING SCENARIOS FOR THE FUTURE"

This session focuses on "thinking about thinking about the future". Scenarios are part of a learning technology for organization leadership and change management. Mr. van der Merwe will show us how scenarios can make HRD strategies more robust in preparing for unpredictable futures.

Louis van der Merwe has had a unique career in large-scale organizational transformation. He spent 15 years at Eskom, the primary South African electric utility. He teaches executive courses in the Netherlands, Australia, the U.S., Canada, and South Africa. He is also an associate of the MIT Center for Organizational Learning. He is the founding partner of the Centre for Generative Leadership.

Moderator: Richard J. Torraco, University of Nebraska

10:00-10:30 **Refreshment Break** *Atrium Courtyard*

SATURDAY, MARCH 8

7:00am to 6:30pm **CONFERENCE CENTRAL, REGISTRATION, AND EXHIBITS OPEN** *Cascades*

7:00-8:15 **Breakfast Food 'n Thoughts** Pull up a chair to meet and dialogue with any one of these groups *Cafe III*

American Vocational Education Research Association (AVERA) Meeting (open to anyone)
Facilitator: Donna H. Redmann, AVERA President

Book Review*: Human Resource Development Review* D. Russ-Eft, H. Preskill & C. Sleezer
Facilitators: Jiping Zhang, Oklahoma State University and Darlene Russ-Eft, Zenger Miller

Book Review*: In Action: Designing Training Programs*, D. Ford, Editor
Facilitator: Maria Hruby-Moore, Ohio State University

8:30-10:00 **KEYNOTE PRESENTATION** *Atrium Ballroom*

Sam Stern, Oregon State University

"BUILDING CORPORATE CREATIVITY THROUGH HRD"

Based on his forthcoming book "Corporate Creativity" (Berrett-Koehler), co-authored with Alan Robinson from the University of Massachusetts, Stern presents new thinking about the role of creativity in corporate performance. Does creativity really matter? Can organizations build a culture of creativity? His research identifies a key role for HRD in enhancing creativity.

Dr. Sam Stern is Professor of Education at Oregon State University. His research and teaching are concerned with education, work, and creativity. Reflecting his interest in both international and interdisciplinary activity, Stern has taught in the Dept. of Systems Science at Tokyo Institute of Technology, the Dept. of Economics at Harvard University, and in the MBA program at the Athens Laboratory of Business Administration in Greece. Much of his recent research has focused on corporate creativity.

Moderator: Darlene Russ-Eft, Zenger-Miller, AHRD Global 100 member

10:00-10:30 **Refreshment Break** *Atrium Courtyard*

FRIDAY, MARCH 7

10:30 - 12:00 PM - CONCURRENT SYMPOSIUM SESSIONS

1 **University Instruction in HRD** *Magnolia*

Chair: Brenda S. Gardner, Xavier University

Comparison of Student Reactions in Traditional and Videoconferencing Courses in Training and Development
Julie A. Furst-Bowe, University of Wisconsin-Stout

The Development of Common Core Learning Outcomes for HRD Professionals Which Have Currency Across National Boundaries: A European Case Study
John S. Walton, London Guildhall University

The Video-Teleconference Distance Education Human Resource Development Graduate Classroom: Quantitative Evaluation Research Directed Toward Effective Practice
John A. Niemi, Northern Illinois University
Kevin Owens, Northern Illinois University
Barbara J. Ehrhard, Northern Illinois University

Relationships Among Training, Performance, and Personal Characteristics of Graduates of Three Dietetic Training Programs
Sally Erickson-Weerts, Mankato State University

2 **Evaluation in HRD** *Terrace-E*

Chair: Tim L. Wentling, University of Illinois

HRD Evaluation as the Catalyst for Organizational Learning
Hallie M. Preskill, University of New Mexico

A Qualitative and Quantitative Approach to Evaluating Leadership Training
Lilanthi Ravishankar, Zenger Miller

Development and Evaluation of the Critical Outcome Technique (COT)
Richard A. Swanson, University of Minnesota
Brent W. Mattson, University of Minnesota

Monitoring the Effectiveness of a Performance-Focused Human Resource Development Workshop at Andersen Consulting Three Months After the Workshop
Joel R. Montgomery, Andersen Consulting, AHRD Global 100 Member

Do You Know About the AHRD Global 100?

The AHRD Global 100 is a special group of HRD leaders who are reflective practitioners dedicated to linking their practice to HRD research and theory. By joining the AHRD Global 100, these members and their companies are making a public commitment to advancing the HRD profession through research.

***Researchers:** Attend session #30 to explore potential research partnerships*
***Practitioner-scholars**: Want to help set the research agenda? Interact with leading thinkers in HRD? Partner with HRD researchers? Then join the AHRD Global 100.*

3 **Strategic HRD** *Sunflower*

Chair: Darlene Russ-Eft, Zenger-Miller, AHRD Global 100 Member

Examination of the Use of Scenarios as Learning and Decision-Making Tools for Human Resource Development
Roger F. Miller, University of Minnesota
Susan A. Lynham, University of Minnesota
Joanne Provo, University of Minnesota
Jeanne M. St. Claire, University of Minnesota

The Alignment of Corporate Strategy and Training: A Survey of Trainees and Managers
Max U. Montesino, Indiana University-Purdue University

Strategic Human Resource Development: A Conceptual Exploration
Monica M. Lee, Lancaster University

The Integration of Human Resource Development Into the Strategic Planning Process: A Comparative Case Study of Three Corporations
Clyde T. Conine, Jr., Macon College

4 **International HRD Perspectives** *Terrace-W*

Chair: Valeria Stokes, ACCO Inc., AHRD Global 100 member

Human Resource Development Practices in American and Chinese High-technology Companies in Taiwan
Hsin-yi Chen, National Dong Hwa University

Changing Work Cultures: Assessing HRD Needs in Francophone West Africa
Carol D. Hansen, Georgia State University
Janet Headley, Georgia State University

Human Resource Development in the People's Republic of China
Bohua Yan, Personnel Center of Liaoning Province, People's Rep. of China
Gary N. McLean, University of Minnesota

5 **Informal Workplace Learning** *Dogwood*

Chair: Sharon J. Confessore, George Washington University

The Impact of Actor Strategies and Work Type on Learning Projects: A Multiple Case Study
Rob F. Poell, University of Nijmegen

Learning the Ropes in the Workplace by Primary Computer Users--- Organizational Socialization and Adaptation
Donna H. Redmann, Louisiana State University
Wanda L. Stitt-Gohdes, University of Georgia
Judith J. Lambrecht, University of Minnesota

Curiosity: Its Role and Implications in Informal Workplace Learning
Thomas G. Reio, Jr., Virginia Polytechnic Institute and State University

FRIDAY, MARCH 7

12:00-1:15 **Lunch Food 'n Thoughts** Pull up a chair to meet and dialogue with any one of these groups — *Cafe III*

Discussion Group: Integrity and AHRD
Facilitator: Victoria J. Marsick, Columbia University and Darlene Russ-Eft, Zenger-Miller

Book Review: ***Scenarios: The Art Of Strategic Conversation,*** Kees van der Heijden
Facilitators: Roger Miller, Susan Lynham, Joanne Provo, Jeanne St. Claire; all from the University of Minnesota, and Kees van der Heijden, Center for Innovative Leadership

1:30 - 3:00 PM - CONCURRENT SYMPOSIUM SESSIONS

6 **Enhancing Team Performance** — *Sunflower*

Chair: Val Kosky, University of Scranton

The Impact of Organizational Sub-Cultures on Information Sharing: A Manufacturing Company's Dilemma
Toni Powell, Barry University

Team Learning Consultation: Pilot Study of an Alternative to Process Consultation
John Redding, Institute for Strategic Learning
Laurel Jeris, Benedictine University
Jeanne Connolly, Northern Illinois University
Michael Moran, Northern Illinois University

Teambuilding Intervention Strategy Deployment: When Companies Don't Listen to Consultants
Paul E. Brauchle, Illinois State University
David W. Wright, Illinois State University

7 **Research Issues in HRD** — *Terrace-W*

Chair: Ronald L. Jacobs, Ohio State University

Data for HRD Research and the 1997 Human Performance Practices Survey
Laurie J. Bassi, American Society for Training and Development
George S. Benson, American Society for Training and Development

The Analysis of Conference Proceedings for the Academy of Human Resource Development (AHRD) 1996: A Review
Nathalie M. van Hooff, University of Twente
Martin Mulder, University of Twente

A Survey of Surveys on Training
Darlene Russ-Eft, Zenger Miller, AHRD Global 100 member

Training and the Decade of the 1980's: Did We Spend What We Said We Were Spending?
Ross E. Azevedo, University of Minnesota
Miles M. Smayling, Mankato State University

FRIDAY, MARCH 7

8 **Adult Learning in the Workplace** *Terrace-E*

Chair: Margaret Lohman, University of Iowa

Measuring Critical Thinking: Is There A Single Instrument?
Patricia K. Leitsch, University of Louisville
Carol A. Lentz, University of Louisville
Combining Constructivism and Andragogy in Computer Software Training
Albert K. Wiswell, Virginia Polytechnic Institute & State University
Sarah Ward, Information Analysis Inc.
Learning to Learn in the Workplace
Gene L. Roth, Northern Illinois University
The Locus of Control in the Adult Learning Process: A Research Agenda
Richard A. Swanson, University of Minnesota
Joanne Provo, University of Minnesota
Tom Gamble, University of Minnesota
Teresa Tillson, University of Minnesota

9 **Changing Organizational Forms** *Magnolia*

Chair: John S. Walton, London Guildhall University

Goal Integration in a Multi-divisional Organization
Richard J. Torraco, University of Nebraska
Mary Finnegan, University of Nebraska
The Roles of Consultants in Gainsharing Firms: Model Development
Eunsang Cho, University of Minnesota
Gary N. McLean, University of Minnesota
Rethinking Boundaryless Organizations: A Framework for the Implementation and Management of Virtual Teams in the Global High-Performance Organization
Lisa Horvath, George Washington University
Deborah Duarte, George Washington University

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FRIDAY, MARCH 7

10 **Instructional Technology** *Dogwood*

Chair: Julie A. Furst-Bowe, University of Wisconsin-Stout

Netagogically Speaking, Is IBT Making the Grade? An Exploration into the Degree Selected Internet Tutorials Measured Up To Four Design Criteria

James J. Kirk, Western Carolina University
Harold Shoemaker, University of Tennessee

Reliance on High-Technology: a Counterproductive Professional Role Construct Found in Medical Schools

Joseph M. Merrill, Baylor College of Medicine
Ronald J. Lorimor, Baylor College of Medicine
Jack I. Thornby, Baylor College of Medicine
Carlos Vallbona, Baylor College of Medicine

Distance Training System (DTS): A Conceptual Framework

Maria Hruby Moore, Ohio State University

Interactive Multimedia Use For Training In Selected Oklahoma City Businesses: A Survey and Case Studies

Bede Anyanwu, Oklahoma State University
Catherine M. Sleezer, Oklahoma State University

3:00-3:30 **Refreshment Break** *Terrace Level Hall*

3:30 - 5:00 PM - CONCURRENT SYMPOSIUM SESSIONS

11 **Work Analysis and Expertise** *Dogwood*

Chair: R. Wayne Pace, Brigham Young University

A Taxonomy of Employee Development: Toward an Organizational Culture of Expertise

Ronald L. Jacobs, Ohio State University

An Integrated Needs Assessment-Evaluation Process

Sharon J. Korth, Xavier University

Needs Assessment in Practice

Catherine M. Sleezer, Oklahoma State University
Craig A. Maile, Oklahoma Dept. of Vocational and Technical Education

An Integrative Job Analysis Model for Human Resources

David E. Arnold, University of Minnesota
Timothy R. McClernon, Piper Jaffray Co., AHRD Global 100 member

12 **Workforce Issues Facing HRD** *Magnolia*

Chair: Kimberly McDonald, Indiana-Purdue University

Employability of Older Workers

Linda Kleijer, University of Twente
Wim J. Nijhof, University of Twente

Diversity Management in Nonprofit Women's Health Care Settings: A Qualitative Study of Race, Class and Gender Influences

Camille A. Cordak, Emory University

An Analysis of Diversity Training Provided by Business and Industry

Rose Mary Wentling, University of Illinois

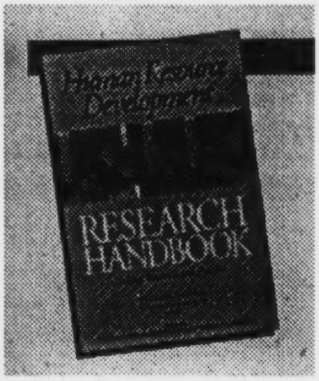
The Role of HRD in The Welfare Revolution: Fostering Intergenerational Transformational Learning

Marsha E. Jackson, Bowie State University
Albert K. Wiswell, Virginia Polytechnic Institute & State University

13 **Special Session: The Essential Competencies for Internal and External OD Consultants: Present and Future** *Terrace-W*

Chair: Gary N. McLean, University of Minnesota

This is a unique opportunity for AHRD members to participate in a worldwide OD competency study. Competencies essential for organization development consultants, internal and external, have evolved over 20 years based on literature and feedback from nearly 2,000 practitioners and academics. Participants in this session will provide input into an 18th revision using small groups to create a list of competencies needed in five years. This data will be combined with similar data from other professional organizations, before a "final" revision is put on the Web for world-wide feedback. This will be a highly interactive session.



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FRIDAY, MARCH 7

14 **Transfer of Learning** *Sunflower*

Chair: David Antonioni, University of Wisconsin-Madison

Factors Affecting Transfer of Training in an Industrial Setting

Reid A. Bates, Louisiana State University
Elwood F. Holton, III, Louisiana State University
Dian L. Seyler, Louisiana State University

Training Effects on Productivity and Work Quality After the Introduction of New Technologies in the Organization - an Exploratory Study

Constantine J. Kontoghiorghes, Georgia State University

Climate for Training Transfer: A Progress Review and Recommendations for Further Research

Gary L. May, Millbrook Distribution Services, AHRD Global 100 member
Barbara A. Reilly, Georgia State University

Development and Validation of a Generalized Learning Transfer Climate Questionnaire: A Preliminary Report

Elwood F. Holton, III, Louisiana State University
Reid A. Bates, Louisiana State University
Michael Leimbach, Wilson Learning Corp., AHRD Global 100 member

15 **Learning Organization Practices** *Terrace-E*

Chair: Verna J. Willis, Georgia State University

Learning Lenses of Leading Organizations: Best Practices Survey

Laurel S. Jeris, Benedictine University

Dimensions of the Learning Organization in Family-Run Firms

Karen E. Watkins, The University of Georgia
Gary L. Selden, Kennesaw State University
Victoria J. Marsick, Columbia University

Research as Development: Evaluating a Learning Organization Implementation

Laura L. Bierema, Michigan State University

5:30-6:30

HRD Graduate Student Reception *Cafe III*

Meet other graduate students and form dinner groups

6:00 **HRDQ Editorial Board Meeting and Dinner** *Camellia*

6:00 **AHRD Global 100 Meeting and Dinner** *TBA*

9:00 **HRD Emerging Research Course (HRD 5770) Dinner** *TBA*

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SATURDAY, MARCH 8

10:30 - 12:00 PM - CONCURRENT SYMPOSIUM SESSIONS

16 **University HRD Programs** *Magnolia*

Chair: Chris Hardy, INNOLOG, Inc.

Determining the Labor Demand and Development Needs of HR/HRD Professionals in China
William J. Rothwell, The Pennsylvania State University

New Forms of Education of Professionals for Vocational Education and Training
Graham Attwell, University of Bremen

Theory to Practice to Theory: Results of Applying a Customer-Driven Continuous Improvement Process to an HRD Academic Program
Wendy E. A. Rouna, University of Minnesota
Roger F. Miller, University of Minnesota

17 **HRD and Performance Outcomes** *Terrace-W*

Chair: Richard J. Torraco, University of Nebraska

Special Report: Outcomes of the Performance in HRD Pre-conference
Richard J. Torraco, University of Nebraska, ISPI/AHRD Research Grant Award Recipient

Going to the Next Level of Growth: Employing Systems Thinking to Make Effective Interventions
Carol Ann Zulauf, Suffolk University
Joseph A. Ilacqua, Bryant College

Independent Quality Assessment of HRD Projects
Martin Mulder, University of Twente

The Relationship Between Managers' Reported Use of Corporately-Developed Training and Performance Indicators for Branch Offices of a Car Rental Firm
Catherine M. Sleezer, Oklahoma State University
Judith Hixon, Oklahoma State University
Kenton Green, Oklahoma State University
Jane Mudgett, Snappy Car Rental Co, AHRD Global 100 member

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18 **Contextual Learning Issues** *Sunflower*

Chair: Robert L. Dilworth, Virginia Commonwealth University

Special Report: Outcomes of the Learning in HRD-Action Learning (IFAL) Pre-conference

Robert L. Dilworth, Virginia Commonwealth University

Creating Mosaics: The Interrelationships Between Knowledge and Context

Barbara J. Daley, University of Wisconsin-Milwaukee

Analysis of Action Learning Experiences Through Use of Critical Incident Reporting

Robert L. Dilworth, Virginia Commonwealth University
Verna J. Willis, Georgia State University

Professional Learning on the Job: A Qualitative Study for One Profession

Kitty H. E. Kwakman, University of Nijmegen

Using the Burke-Litwin Model as a Lens for Understanding the Implications of Action Reflection Learning™ as a Catalyst for Organizational Change

ARL™ Inquiry

19 **Organization Development & Change** *Terrace-E*

Chair: Allan Church, W. Warner Burke Associates

Fast Cycle Organization Development: Analysis and Assessment from an Organizational Learning Perspective

John C. Redding, Institute for Strategic Learning

Intervening to Align: Approaches to Improve Organizational Alignment

Steven W. Semler, University of Minnesota

The Effectiveness of Total Quality Management: A Response to the Critics

Douglas H. Smith, Florida International University
Ralph G. Lewis, Florida International University

Revisiting our Analytical Models of Organizational Change

David W. Frantz, Purdue University

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20 **Integrity in HRD** *Dogwood*

Chair: Neal Chalofsky, George Washington University

Special Report: Outcomes of the Integrity in HRD Pre-conference
Neal Chalofsky, George Washington University

The Effects of Blame Attributions and Justice Violations on Revenge and Forgiveness in the Workplace
Murray O. Bradfield, Georgia State University
Karl Aquino, Georgia State University
Doug Stanwyck, Georgia State University

The Values of HRD Practitioners
Jackson Rains, George Washington University

Secondary Vocational Business Students' Ethical Decision Making
Thomas Li-Ping Tang, Middle Tennessee State University
Emily James Weatherford, Northwestern State University of Louisiana

The Meaning of Work: A Literature Review
Neal Chalofsky, George Washington University
Patricia Daly, George Washington University
Janet Silverthorne, George Washington University
Lauren Turner, The MITRE Corporation

12:00-1:30 **Lunch Food 'n Thoughts** Pull up a chair to meet and dialogue with any one of these groups *Cafe III*

Book Review*: Models For Human Performance Improvement,* W. Rothwell
Facilitator: R. Wayne Pace, Brigham Young University

Book Review*: Learning as a Way of Being,* P. B. Vaill
Facilitator: Deane Gradous, University of St. Thomas and Carson R. Arnett, Louisiana State University

ASTD Research Committee/AHRD Board Joint Meeting *Camellia*

1:30 - 3:00 PM - CONCURRENT SYMPOSIUM SESSIONS

21 **Assessing the Learning Organization** *Terrace-E*

Chair: Albert K. Wiswell, Virginia Polytechnic Institute & State University

Measuring Organizational Learning: A Confirmatory Factor Analysis of an Organizational Survey

Jamie Callahan Fabian, George Washington University
Ralph O. Mueller, George Washington University
Dail L. Fields, George Washington University

Operationalizing Organizational Learning Models Using the Dechant/Marsick Instrument

Andrea Hornett, George Washington University

Measuring Dimensions of the Learning Organization

Karen E. Watkins, The University of Georgia
Baiyin Yang, Auburn University
Victoria J. Marsick, Columbia University

Finding Common and Uncommon Ground Among Learning Organization Models

Martha A. Gephart, Columbia University
Victoria J. Marsick, Columbia University
Mark E. Van Buren, American Society for Training and Development

22 **Leadership & Executive Development** *Sunflower*

Chair: Martin Mulder, University of Twente

Leading and Managing in a Service Organization: An Examination of Line vs. Staff Effectiveness

Allan H. Church, W. Warner Burke Associates Inc.
Janine Waclawski, W. Warner Burke Associates Inc.

Leadership Throughout Organizations

Darlene Russ-Eft, Zenger Miller, AHRD Global 100 member

The Development and Evaluation of a Model of Responsible Leadership for Performance: Beginning the Journey

Susan A. Lynham, University of Minnesota
Richard A. Swanson, University of Minnesota

SATURDAY, MARCH 8

23 **Advancing the Profession Through Journals** *Terrace-W*

Chair: Richard A. Swanson, University of Minnesota

The Role of the *Human Resource Development Quarterly* in Shaping the HRD Profession: An Eight-Year Perspective

Gary N. McLean, University of Minnesota, St. Paul & Editor, HRDQ

An Update on The International Journal of Training And Development

William J. Rothwell, The Pennsylvania State University & North American Editor, IJTD

Guidelines and Suggestions for Publishing HRD Research and Theory in Adult Education Quarterly

John M. Dirkx, Michigan State University & Editor, AEQ

Sean Courtney, University of Nebraska-Lincoln & Editor, AEQ

Performance Improvement Quarterly

Peter J. Dean, University of Tennessee & Editor, PIQ

Human Resource Development International

Monica M. Lee, Lancaster University, UK & Editor, HRDI

24 **Charting the Future of HRD** *Dogwood*

Chair: Timothy R. McClernon, Piper Jaffray, AHRD Global 100 member

Choose Your Future: Independent Techomancer or Holistic Human Developer

Steven W. Semler, University of Minnesota

Current and Future Topics in Human Resource Development: Linking Research with Practitioner Needs

Tim L. Wentling, University of Illinois at Urbana-Champaign

Erica D. Brinkley, Walgreen Company

Eric Nelson, University of Illinois at Urbana-Champaign

Re-searching Human Resource Development: Societal Functions of Training and Education

David J. Little, University of Regina

Kevin P. Quinlan, University of Regina

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SATURDAY, MARCH 8

25 **Measurement and Research Tools** *Magnolia*

Chair: Wim J. Nijhof, University of Twente

The "Best Fit" Training: Measure Employee Learning Style Strengths

Daniel L. Parry, University of Louisville

Measuring Customer Loyalty

Karen A. Brennan, Zenger Miller

Textual Analysis with Neural Networks as an Alternative Assessment Tool for Evaluating Responses to Open Ended Questions

William Venable, Oklahoma State University
F. George McDuffee, Oklahoma State University

The Impact of Influential Observations on Multiple Regression Analysis in HRD Research

Reid A. Bates, Louisiana State University
Elwood F. Holton, III, Louisiana State University
Michael F. Burnett, Louisiana State University

3:00-3:30 **Refreshment Break** *Terrace Level Hall*

3:30 - 5:00 PM - CONCURRENT SYMPOSIUM SESSIONS

26 **Purpose and Place of HRD: Some Perspectives on the Field** *Terrace-W*

Chair: Robert W. Rowden, Brenau University

An Introduction To A Debate On The Foundations Of The Field: The Purpose And Place Of HRD

Robert W. Rowden, Brenau University

The Purpose of Human Resource Development is to Improve Performance

Richard A. Swanson, University of Minnesota
David E. Arnold, University of Minnesota

The Development of the Individual Leads to More Productive Workplaces

Laura L. Bierema, Michigan State University

HRD As Evolutionary System: From Pyramid-Building to Space-Walking and Beyond

Verna J. Willis, Georgia State University

To Earn or to Learn? The Meaning of Workplace Learning in HRD

John M. Dirkx, Michigan State University

SATURDAY, MARCH 8

27 **Global HRD** *Sunflower*

Chair: Monica M. Lee, Lancaster University, UK

Globalization of Human Resource Management in Government: A Cross-Cultural Perspective

Pan Suk Kim, University of Inchon

An Interpretive Study of the Perspectives of United State Repatriates on Repatriation and the Role of Their Employers

Jean Rowe McFarland, G. P. Morgan & Associates, Inc.

Managerial Learning in the Transition to a Free Market Economy in Romanian Private Companies

Maria Cseh, The University of Georgia

The Status of Human Resource Development in French Companies

Berenice Hillion, University of Minnesota
Gary N. McLean, University of Minnesota

28 **Motivation to Learn and Perform** *Dogwood*

Chair: Diane M. Gayeski, OmniCom Associates

Getting it Together: Motivations and Success Characteristics for Interorganizational Collaborations

Mary Wilson Callahan, University of Georgia

Deterrents to Participation in Women Only Learning Events: A Case Study

Kimberly S. McDonald, Indiana-Purdue University Fort Wayne
Linda M. Hite, Indiana-Purdue University Fort Wayne

Learning Climate and the Structure of Work

Mirjam A.A.H. van Moorsel, University of Nijmegen

Factors Affecting Motivation to Use Computer-Based Training

Dian L. Seyler, Louisiana State University
Elwood F. Holton, III, Louisiana State University
Reid A. Bates, Louisiana State University
Manuel A. Carvalho, Ciba-Geigy Corporation

29 **Enhancing Individual Readiness** *Magnolia*

Chair: Donna H. Redmann, Louisiana State University

Secondary School Administrator's Perception of Enhancing Self-Worth through Service

Thomas Li-Ping Tang, Middle Tennessee State University
Emily James Weatherford, Northwestern State University of Louisiana

Acceptable Vs. Marginal Police Officers' Psychological Ratings: a Longitudinal Comparison of Job Performance

Gwendolyn V. Brown, City of Miami Police Department
Douglas H. Smith, Florida International University

An Analysis of the Phase Model of Burnout

Thomas A. Myers, Georgia State University

30 **AHRD Global 100 Session: Linking HRD Practice and Research** *Terrace-E*

Chair: Barbara L. Swanson, Swanson & Associates, Inc.,
AHRD Global 100 member

This special session will give researchers and the AHRD Global 100, our special group of organizational members committed to research-based practice, an opportunity to strengthen links between research and practice. The session will include identification of current business and HRD imperatives with small group work on those imperatives. Discussion will include relevant research and theory, as well as work that still needs to be done and available resources. Where appropriate, partnerships will be formed between Global 100 members with researchable questions and scholars looking for research opportunities.

6:00

PRESIDENT'S RECEPTION *Atrium Courtyard*
All registered attendees invited

7:00 **PRESIDENT'S DINNER AND AWARDS BANQUET -** *Atrium Ballroom*
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SUNDAY, MARCH 9

7:00am to 2:00pm **CONFERENCE CENTRAL, REGISTRATION, AND EXHIBITS OPEN** *Cascades*

10:30 - 12:00 PM - CONCURRENT SYMPOSIUM SESSIONS

7:00-8:15 🍴 **Breakfast Food 'n Thoughts** Pull up a chair to meet and dialogue with any one of these groups *Cafe III*

Book Review: ***Trends That Affect Corporate Learning And Performance***, L. Bassi
Facilitators: Laurie J. Bassi, American Society for Training and Development and Christopher Washington, Ohio State University

Book Review: ***In Action: Creating The Learning Organization***, K. Watkins & V. Marsick, Editors
Facilitators: Ghazala Ovaice, University of Illinois; Andrea Ellinger, University of Georgia; and Victoria J. Marsick, Columbia University

AHRD Board of Directors Meeting (new board) *Rosewood*

31 **Career Issues in Organizations** *Terrace-E*
Chair: Kevin Quinlan, University of Regina, Canada
Learning During Downsizing: Stories from the Survivors
Sharon J. Confessore, George Washington University
Organizational Career Planning & Development: Changes and Trends in Practice
Brenda S. Gardner, Xavier University
Employee Strategies and Corporate Development - Consensus Without Conflict?
Anders Vind, Roskilde University
Women of Color in Corporate America: We Still Have Far to Go
Lyn Clark Pegg, University of Minnesota

32 **Performance Improvement Processes** *Dogwood*
Chair: Reid A. Bates, Louisiana State University
Never the Twain Shall Meet?: A Glimpse into High Performance Work Practices and Downsizing
Laurie J. Bassi, American Society for Training and Development
Mark E. Van Buren, American Society for Training and Development
Performance Diagnosis Matrix: A Discussion of Human Resources Development Scholarship
Wendy E. A. Ruona, University of Minnesota
Elaine Lyford-Nojima, University of Minnesota
An Exploratory Study of Significant Relationships and the Work Performance Styles of Peak Performers, Workaholics and Average Performers
Gloria Wright, Gloria Wright & Associates
Integrating Communication in Organizations
Diane M. Gayeski, OmniCom Assoc., ISPI/AHRD Research Grant Award

33 **Management Development** *Terrace-W*

Chair: Peter J. Dean, University of Tennessee

LMX Theory, Personality Type and Management Development
Janet Z. Burns, Georgia State University

Frameworks for Choice of Management Development Methods
Alan Mumford, Specialist in Director and Management Development

Effectiveness of 360-Degree Feedback on Management Development from the Recipient's Perspective
Stephen M. Callender, Personnel Decisions International
Albert K. Wiswell, Virginia Polytechnic Institute & State University

34 **Assessing Employee Skills** *Magnolia*

Chair: David Frantz, Purdue University

Bridging the Training Gap: Identifying Work Place Transferable Skills Needs in Manufacturing Organizations in East Central Minnesota
K. Peter Kuchinke, University of Minnesota
James M. Brown, University of Minnesota
Howie Anderson, Pine Technical College
Joe Hobson, Pine Technical College

Diagnosing the Learning Network in a Changing Organization
Ferd J. Van der Krogt, University of Nijmegen

Employee Efficacy Generalization of Basic Mathematics Skills
Alan J. Coleman, Ethicon, Inc.
Patricia E. Boverie, University of New Mexico

A Case Study of the Feasibility of Developing a Writing Test for Hiring Technical Writers and Instructional Designers
Rosemarie J. Park, University of Minnesota

35 **Individual Learning Issues** *Sunflower*

Chair: Rose Mary Wentling, University of Illinois

Bringing Cross-Cultural Sensitivity to Human Resource Development: an Example from the Classroom
Robert L. Dilworth, Virginia Commonwealth University

The Analysis of the Effects of Experiential Training on Sojourners' Cross-Cultural Adaptability
Donna L. Goldstein, Development Associates International
Douglas H. Smith, Florida International University

Play Theory for HRD: A Conceptual Literature Review
Rebecca Adams, St. Mary's Healthcare System, Inc.

10:00-10:30 **Refreshment Break** *Terrace Level Hall*

SUNDAY, MARCH 9

10:30-12:00 **KEYNOTE PRESENTATION** *Atrium Ballroom*

Craig J. Russell, University of Oklahoma
J. C. Penney Chair of Leadership and Professor of Psychology

"BREAKING DOWN THE WALLS IN HRD RESEARCH AND SCHOLARSHIP"

Reaction from AHRD President
Open Forum & Discussion

Because it is an emerging scholarly field, HRD scholars are dispersed across psychology, management and education. Despite similar interests and objectives, scholars have still not bridged the discipline gaps that divide them. If research is to lead the HRD profession, ways will have to be found to break down the walls. This session will discuss the reasons the walls exist, and what needs to happen to bring HRD scholars closer together.

Dr. Craig Russell's research focuses on advancing theory and practice in selection and development of organizational leaders. His work has appeared in leading human resource, management, and leadership journals. He actively conducts field research and assists organizations in managerial selection and development. He has received over $2 million dollars in research support from a wide variety of private and public organizations. He was formerly Associate Editor of the Journal of Applied Psychology.

Moderator: Hallie M. Preskill, University of New Mexico

12:00-1:00 **AHRD Business Meeting - all Academy members** *Atrium Ballroom*

1:00-2:00 **AHRD Board of Directors Meeting (new board)** *Rosewood*

1:30-3:30 **HRD Emerging Research Course (HRD 5770) Meeting** *Sunflower*

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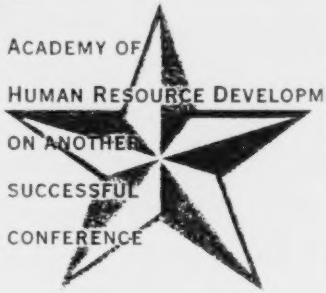

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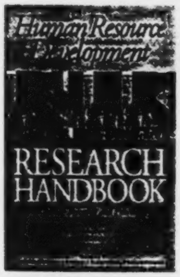

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Human Resource Development Research: Is Anyone Listening?

Gary N. McLean
University of Minnesota, St. Paul

Discrepancies between HRD "best practices" as described in research and those found in business suggest that there is a disconnect between researchers and practitioners. Systemically, the problem exists at several levels: researchers and their work contexts, dissemination modes (journals, conferences, electronic modes, and academic consultants), and practitioners and their organizational contexts. An open-ended question to practitioners, personal experiences, and literature identified reasons for the disconnect. Recommendations are made for improving connections.

A quick review of current issues in any popular business journal or magazine will reveal a number of "hot" topics that are related to human resource development: re-engineering, downsizing, chaos theory, 360-degree feedback or upward appraisal, organizational learning, systems thinking, large scale experiences, TQM/CQI, goal setting, vision and mission statements, values statements, distance learning, and on and on the list could go. Businesses switch so quickly from one current fad to another that employees understand well the concept of "flavor/fad of the month." They know that they don't have to take the latest emphasis seriously; if they just outwait it, it will disappear.

Research tells us that there are three ways to respond to each of these practices:

- Some are appropriate and desirable, if used correctly.
- Some are inappropriate and even harmful, especially if not used correctly.
- And for some, the research just doesn't tell us yet whether the practice is appropriate or not, or when, where, and how it is appropriate. We just don't know.

Given that the research does tell us something about some of these practices, and given that research recommendations often seem to be ignored by business practice, why doesn't business pay more attention to the research findings? And there is also the flip side. Research tells us, for example, that expatriate and cross-cultural training are essential in companies seeking globalization, and that organization development is far more effective than training for diversity. Yet these findings are likewise overlooked by most businesses, in spite of the clear evidence of research.

A Systemic View of the Problem

It has been easy for researchers to blame practitioners for not paying more attention to the research in determining "best practices," just as it has been easy for practitioners to disregard researchers for a host of reasons. But neither view is correct. Using systems thinking, it becomes obvious that there are multiple sources of problems that must be addressed if we are to hope for open communication between researchers and practitioners of human resource development. As Susan DeVogel, a PhD consultant in organization development, said, "Knowledge doesn't get disseminated effectively to the practitioner, the practitioners aren't keeping up, and, even if they did, their customers aren't terribly interested."

On the production side, the researchers themselves bear some responsibility, as do the organizations in which they work and the contexts that they provide. Given that most of the research in human resource development is conducted by academics, the organizational contexts

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are most often universities. To a much lesser degree, we find some research conducted by consultants (who are not employed primarily in universities) and, to an almost minuscule extent, practitioner scholars.

On the consumer side, other than other academics, at least one intended consumer is probably the HRD practitioner, though the desired consumer may well be executives or operational managers. As with researchers, these personnel also function within organizational contexts. While these organizations can be of almost any type, including governmental and not-for-profit, the focus is often directed towards for-profit businesses, usually medium- to large-sized.

While these are usually the two foci of the discussion, the dissemination tools that are intended to bridge producers and consumers also bear responsibility. Traditionally, journals have been the primary source for disseminating research information to the field. But there have always been two types of journals: those intended primarily for a scholarly audience (the so-called refereed journals) and those intended primarily for a user audience (the so-called trade journals). Two other dissemination sources have also been common--conferences (also scholarly- and practitioner-oriented) and the consulting work of the researcher, who, hopefully, is able to transfer research findings into practice through the consulting role. Fourth, a rapidly emerging dissemination source is, of course, electronic media--primarily the internet, including the use of Web pages, e-mail, listservs, chat rooms, and video cameras installed on computers, but also including teleconferencing.

In the remainder of this paper, each of the components in the research-to-application continuum will be examined to determine what causes dysfunction to occur. Methods used in determining the sources will first be described. Suggestions will also be made in each area to suggest how a functional theory-to-practice continuum can be created.

Methodology

There is no pretense of this being a formal research study; after all, if it were, no one would listen. Unfortunately, however, I have enough research blood in me that I couldn't completely ignore all of my training. So, in addition to a cursory literature review, a brief, open-ended question was sent to twenty consultant and in-house practitioners asking them: "Why are HRD best practices, as identified through academic research, so often ignored by practitioners?" Twelve responded. Their comments, with attribution, when permission was given, are incorporated into the literature and into my own personal observations.

Causes of Dysfunctional Communication in Research

Within the research-to-practice continuum, each component of the system bears some responsibility for the dysfunctional communication that occurs between researchers and practitioners in preventing the application of practices in organizations that are congruent with research.

Research Context As indicated earlier, the context for most researchers in human resource development resides within the university. Research, therefore, is often impacted by the culture of this context. The characteristics of this context that impact negatively on the results of such research include:

Publish or perish! Motives are important. Why one does what one does often influences who it impacts and how much. Academia, through its reward systems, focuses more on number of publications and grant funding than on impact. As a result, researchers, responding to this system, are less concerned about communicating with practitioners, and thus affecting practice, than they are in accumulating the "green stamps" (or today it would be frequent buyer points on their gold card).

Disparaging of hands-on research and dissemination. The flip side of the preceding point is that the reward systems of academia view with skepticism, if not disgust, action research and other paradigms for knowledge acquisition that require the academic to get his or her hands dirty. Even such significant contributions to knowledge as editorships of major journals, at least in HRD, and "translating" one's research into lay language and publishing in trade journals are seldom rewarded within academia. So why would one do these--at least within the context of extrinsic motivation.

Demands on time; "do more with less." As in many segments of society today, academia is being confronted with getting more done with less. As faculty members retire (a common occurrence within higher education today), they are not replaced, or they are replaced with contract employees. Movement toward revenue-centered management has increased pressures on such things as student credit hours and numbers of graduates. Workloads are increasing with no additional resources to get things done. Within this context, senior professors--those who have tenure and have reached the end of the promotion line, and who can earn more in one day's consulting than the institution can possibly reward them with an annual pay increase--may no longer buy into doing research. Thus, after serving their apprenticeship, those who should be best positioned to influence practice through research often become practitioners in their own ways.

Multiple missions mean none is done well. Most universities have moved to adopt the three-fold mission of the land-grant university: research, teaching, and service. Yet, this is often done without the use of differential staffing. Thus, every faculty member is expected to be at least adequate in all three. Those expert in one, adequate in one, and inadequate in one are no longer likely to last long within the university. Traditionally, it was possible for outstanding researchers to be so successful in grant awards that they could buy themselves out of teaching and gain tenure based on their research. Today, with the expectation of excellence in all three areas, it has become very difficult to do well in any of the three, especially if one wants a life at all outside the academy.

Funding for HRD research is sparse. Successful fields in academic research are largely funded by government agencies, especially through NSF, USIA, USAID, World Bank, UN agencies, defense agencies, even the Department of Education. Fields that attract significant funding from corporations are those that can provide them with products (and very occasionally) services that can be marketed. HRD doesn't fit into any of these areas neatly. And when they do gain funding, it is more likely to be for development than for research. Thus, the research that is done tends to be "out of one's hide," and, therefore, scope and paradigm are chosen based on limited resources rather than what is needed.

Research by non-academicians is not rewarded, and theory is disparaged. Those outside of academia who aspire to doing research are confronted with almost the opposite of what has just been described. Consultants and practitioners receive no rewards, typically, for doing research, and if they do conduct research, they have to be careful that their results do not shed bad light on their products or services. The "Business Contexts" section will expand further on the problems associated with practitioners doing research.

If academia can't get its act together, why should anyone listen to anything that comes out of academia? Universities, especially large universities, are notoriously poor in their own HRD practices. Roland Sullivan, an external OD consultant, put it this way:

> Much of the academic world (i.e., the state of higher education) is seen as not being relevant in today's world. If you can not get your HRD practices to be effective in your systems, then your credibility is weakened.

Is there an institution of higher education out there that does not need a huge dose of our own best practices? There are none of which I am aware!

HRD Researchers The researcher does not exist separate from his or her context. Thus, each of the items above will impact the researcher in ways that negatively affect how practice is influenced by research. Further, however, there are factors resident with the researcher that also limit the ways in which practice is influenced by research.

Get it done--for tenure, promotion, pay. Consistent with the organizational reward systems, the professorial motive for doing research is seldom to change practice. It is to achieve the rewards offered by the institution. And within research academia today, research--traditional, scholarly inquiry--is still the most important criterion for tenure, promotion, and pay. This leads to the next point.

Quantity vs. quality. Quality, then, becomes important as measured by the acceptance of articles in refereed journals. It is not based on its importance to the business world (especially if our colleagues happen to be in education or psychology or speech communications or adult education, rather than business). The goal of the researcher, then, becomes one of accumulating large numbers of published but refereed journal articles. And this leads, naturally, to the next point.

Write for colleagues, not for business. The way one gets published in refereed journals is to meet the criteria of the research establishment, based largely on tradition. Those criteria almost always ensure that our writing will not be read or understood within the business context. And once published, one's research is read by tenure, promotion, or review committees, who apply the same criteria. The cycle continues; researchers write for researchers, and their writings are ignored by business.

Research results often appear to be biased. Barbara Butts Williams, Leadership Development Officer at the St. Paul Companies, commented: "Too often, only successes are cited in academic research. Practitioners understand that...mistakes and failures will occur; we want to hear about the lessons learned from the difficulties experienced." I recall the amazement of my colleagues when I had an article published in a refereed journal in which we shared experiences related to a failed OD intervention (Johansen & McLean, 1995).

Obfuscation. When I asked one of my colleagues what he thought the problem was, he said, "Researchers obfuscate ubiquitously in their writing." And he said it with a straight face. There are times when I read a manuscript submitted to the *Human Resource Development Quarterly*, and I say to myself, "What was that article about?" Now, I understand research, and I know the jargon, and I know the paradigms, and I'm liberally educated, and steeped in business theory and practice--and I still don't get it! Consider these titles from last year's *HRDQ* (and I could have used almost all of the titles):

Learning self-direction in a social and experiential context
Boundary management in action reflection learning™ research: Taking the role of a sophisticated barbarian
Self-directed learning readiness and occupational categories

A manager of management development of a Fortune 100 company said, "If you can't say it in five bullets, then it's not worth saying in the minds of many business people." Is there any wonder why our business colleagues complain about the way in which we write?

No or outdated knowledge of the workplace. While this may or may not be a valid observation, it is certainly one that is widely shared within the business community. They look at the topics we research, or the way in which we do our research, and the recommendations we make, and they are convinced that we don't understand the workplace. They wonder how we can, especially if we don't have extensive business experience and aren't currently involved in a consulting practice that takes us into businesses. They also worry about how much of our research is primarily driven by students whom they perceive to be even more naive relative to the work world..

Research preparation in fields other than HRD. Given the relative infancy of HRD, many of us who are doing research in HRD come from fields other than HRD. Many of us come out of some content field in education--my own background is in business education--but others come from adult education, psychology, organizational behavior, speech communications, sociology, health or public administration, economics, and on and on the list goes. There is a freedom in this, in that we are able to bring a fresh perspective to our research. But the downside is that we don't build well on what has gone before because we may not even know or understand well what that is. We may also not be well grounded in what the field needs, so our research may not "hit the mark" from a business perspective.

Work within the silo of their discipline. Another problem that we face as a field is the breadth of the foundational areas that exist within HRD. We are truly prisoners of our silos, especially when we come out of an academic context in which specialization is the goal, rather than generalization. But a systems perspective within the business community requires a broad perspective. Answers within silos don't speak very well to systems-wide issues. (This issue, of course, is also a major problem within organizational contexts.)

Dissemination Another of the major factors contributing to incongruence between research and business needs is the way in which research is disseminated. Five, of many forms of dissemination, are explored below.

Scholarly journals. Most of our research is targeted toward scholarly--preferably refereed--journals, unless one thinks that there is a possibility of getting into the *Harvard Business Review*. But, if we want to impact what goes on in business, this is not a very productive outlet. Few practitioners will bother to read such journals, and those who do may quickly give up in disgust over the lack of relevance to their world. Consider that scholarly journals

- are designed to meet the needs of academia.
- have editors, reviewers, and board members who are academics (and, therefore, traditional).
- are proliferating rapidly, with small circulations, clearly designed to provide outlets for researchers, not to meet the demands of practitioners for research.
- use dull layouts and graphics.

There is nothing here that will encourage academics to write for the business community nor to encourage business practitioners to learn about and implement the findings of research.

Trade journals. Forbes and *The Wall Street Journal* are examples of two journals that dominate the business community; within human resource development, we would look to *Training* and *Training and Development* as the two dominating trade journals. Such journals do not typically ask, How can we put forward the best practices identified in research for our readers? Rather, questions that are more likely to be heard are:

- What will sell?
- What's "hot" today?
- How can I write an article to market my services?
- Can't that be written more simply?
- What haven't we written about lately?

These are not the questions that are likely to push authors to rely on research nor for publishers to seek out academic research.

If there is any question about whether trade or scholarly journals predominate, consider the 1996 circulation figures in Table 1 (Braun & Dow, 1997; *Ulrich's...*, 1997).. Note the huge differences between trade and scholarly journals:

Table 1
Circulation of Trade and Academic Journals, as of mid-1996

Trade Journal	**Circulation**	**Scholarly Journal**	**Circulation**
Training	50,000	HRDQ	1,765
Training and Development	35,229	Academy of Management Review	11,500
Forbes	779,000	Performance Improvement Qtrly	Not listed
Harvard Business Review	212,576	Group and Team Effectiveness Journal	Not listed
Personnel Journal	29,004	Consultation	Not listed
Management Review	67,000	Human Systems Journal	Not listed
Wall Street Journal	1,013,000	OD Journal	Not listed

Is there any question which journals are most impacting practice? Most of the scholarly journals checked are not even considered to be important enough to list!

Conferences. Another source of dissemination is papers at academic conferences, such as we will experience here, or at other conferences, such as the Academy of Management, American Educational Research Association, and the International Management Development Association. As with journals, we also have a continuum of conferences, including the ASTD International Conference and Training's national conferences. As with the journals, there are problems with both types of conferences. At the academic conferences, except here, of course, one is likely to hear the following statements from attendees:

- "Hey, we can read! You don't need to read to us!"
- "Don't I get a chance to say something?"
- "What does this have to do with anything?" Or, as my father used to say, "What does this have to do with the price of beans in Boston?"
- "Huh? What did he/she say? Multiscaled discriminate analysis?

At practitioner conferences, we are likely to hear:

- "Practitioners aren't interested in research"--even though almost 400 showed up at last year's ASTD conference to hear a presentation on the implications for practice of research on 360-degree feedback (McLean, 1996).
- "What can I do tomorrow when I return to my job?"
- "Entertain me!"
- "I've only been on the job for six months; I don't know what you're talking about."

Note the absence of any request for a research base or best practices based on the research.

Electronic media. Increasingly, academics and practitioners are turning to various types of electronic media for their information, primarily those associated with the internet but perhaps also including CD-ROMs, intranets, teleconferencing, and so on. But do these new media solve the communication problems between researchers and practitioners? Not likely. Researchers ask:

- "How does this fit into my reward system; does it count?" Even if the online journal is refereed, there is fear that the non-traditional nature of the "publication" will exclude it from the traditional reward mechanisms.
- "Given the nature of electronic media and the failure of the copyright laws to keep up, how can I be assured that there will be adequate protection of my intellectual property?"
- "Why should I give away my expertise when companies will pay for it?"

At the same time, practitioners ask:

- "How will I know if I can believe the information on-line?" (or, in research terms, is the information valid?)
- "I'm already overloaded with the number of e-mail messages I get a day; how can I deal with all of the information out there?"
- "If they don't write any differently online than they do in those darn journals, how can I understand what's online?"

Academics consulting. Many academics also consult, a factor of the pay systems in most of their organizational contexts! On the surface, this would appear to be the ideal way in which to transfer research findings into the business world. In reality, it doesn't seem to change much.

- Most businesses are seeking consultants because of their **business** expertise, not **research** expertise. And so the academics have to conform or they won't have business.
- Academics who are consulting might well have to ask, "What hat do I have on now?" Behavior that works in one context may not transfer well to the other context.
- Clearly there is the temptation to be a chameleon; when in Rome, do as the Romans do. Again, the marketplace that doesn't value research may well control the behavior of the academics when in business. And the research gets left in academia.

Teaching. Since most of us in higher education also teach, and since many of our students are current practitioners, one might also guess that teaching would be an ideal way to change practice to be consistent with research. Again, this doesn't always happen.

- Research interests may not be aligned with teaching assignments.
- Textbooks may not have a research base.
- Students may not be interested in research; and with student evaluations increasing in importance within higher education reward systems, faculty may well deliver what they perceive students to want.
- Faculty may not be well versed in research outside of their area of expertise.

Business Context As we move to considering the consuming end of the system, we move to the context in which the research is intended ultimately to be transferred. The culture of that context will determine, to a large extent, how much the research will impact business practice.

Get it done - NOW! Of all the responses received to the open-ended question, this was most frequently stated. Business is now operating in cybertime. Roland Sullivan, quoted earlier, stated: "Change is happening so fast out here now that, by the time the research gets published (years), the best practice researched has evolved through real-time intuitive research, or the practice no longer fits the need." This is closely tied to the second problem.

Don't bother us; we don't have time. This complaint has dual impact. First, it means that businesses don't have time to work with researchers to provide them with a "real" laboratory in which to conduct their research. Second, if the research results aren't easily accessed, when needed, in language that is easily understood, then the business world doesn't have the time to seek it out in all of the convoluted ways in which we do research. Think about what it takes for us as researchers to conduct a review of the literature. Is this an easy task (even with computers)? Is it something that can be done in an hour or two so we have a good synthesis? Obviously, the answer is a resounding NO!

But we're different. Here's the age-old refrain. "It might work in Company A, but it won't work here; we're different." And so the research, the theory, the model building, core principles can all be dismissed--"because we're different." Of course, every organization is unique. And our research paradigms are moving away from paradigms in which generalizability is the desired end. So those raising this refrain are increasingly reinforced in their belief.

Perception of academics as living in the "ivory tower." The business world **knows** that academicians are out of touch and don't understand the business world. After all, if they understood, then their writing wouldn't be so theoretical. It would be more practical, down to earth, and implementable.

Theory doesn't work; not practical. Following directly out of the previous point, if academicians don't know about the business world, then obviously any theories they develop can't work.

Confidentiality is critical. Businesses might well say: "We live in a competitive world. If we do allow academicians into our workplace, then they'll write about us. If they do that, our competition will find out about us and beat us at our own game. Further, they'll pick up on all of our weaknesses and foibles, exposing our vulnerabilities. We can't afford to have that happen." And, as a result, again, researchers are excluded from the business place. Falling back on college students as our subjects, our results don't apply as well as they could have with a larger and different sample, and business again says that research is not practical.

Change is difficult. Even if business knows that it can do things better, it often resists because of the difficulty and time involved in creating change. Businesses still function according to the "if it ain't broke, don't fix it" syndrome, in spite of the quality movement that has raised serious questions about the ability of such businesses to remain productive and competitive. According to Druckman and Bjork (1994), the difficulty of changing organizational culture may be the greatest impediment to bringing about change, even when everyone knows that the change is for the best. As they stated,

> what has become apparent to us is that specifying the techniques and innovations that do and do not have the potential to enhance individual and team performance is only part of the battle. Without an organizational culture that fosters the changes needed to implement those innovations, proposals for

> change, however credible their source or convincing the evidence, will have little effect. (p. 295)

The ethical approach isn't necessarily the profitable approach. A consultant in a large consulting firm told me,

> We know that re-engineering isn't what our clients need. We have an alternative approach that we know will work better. But so long as clients keep buying our re-engineering service, we'll keep selling it. That's easier than putting a new service in place and makes more money in the short term.

I asked that same consultant about evaluation of his company's services. He said,

> We never go back to our previous clients to find out how our services are meeting the clients' needs. We're afraid that, if we ask them, they'll tell us that it's not working, and then we'll have to do something about it, not only for them, but for our other clients. If we don't know, then we don't have to do anything.

This is another example of companies being driven by the short-term bottom line. Even when the research is known, and best practices of research agree with the understood best practices of business, there is no guarantee that those best practices will be used.

HRD Practitioners Finally, we explore the situation for those to whom we look for specific implementation of our research. Just as researchers are heavily influenced by their workplace context, so, too, are HRD practitioners impacted by their workplace, as described in the preceding section. In addition, they reflect the following concerns.

It's not understandable. The research literature is full of jargon and technical language. It is written by people who, typically, have a minimum of 21 years of education! They typically have a pretty good vocabulary, and they tend not to be bashful in using it. How well does such writing communicate to the line operator who has been moved into a trainer role because he/she is an expert operator? The operator may well have no more than a high school education. Unless written for such a person, the writing level is probably not going to be appropriate.

Research articles are boring. Research articles are written in a sameness that every one of us who does research can cite: problem statement early in the study, significance of the study, specific research questions, definitions, review of the literature, methodology, findings, discussion, recommendations, and conclusion. Doesn't that sound familiar? But does it sound interesting? Of course not.

Where do we find it? Can you tell me one source you would go to if you wanted to find out about best practices, based on research, in evaluating training? How about in defining the conditions for maximizing transfer of training? How effective is CQI? The reality is that there is no one source. Even an extended review of the literature doesn't give us simple answers to these complex questions.

Hurry, hurry, hurry. Just as the speed of doing business is increasing, and as researchers are being asked to do more with less, so also are practitioners being asked to do more with less. Not only do they not have time to discover the best practices according to research, but, if they find that what they are doing is not consistent with the research, then they don't have time to rewrite the training, or redo the policy, or create a different intervention. So it's easier to say, "What we're using is working just fine. We don't have time to try something that might not work as well."

Change is difficult. Just as changing organizational culture is difficult, so, too, is it difficult to change individual behavior. Looking again at school-based research, Huberman (1993) noted: "If the innovation literature teaches us just one thing, it is that practice change is an uneven, uncertain affair that seldom transcends trivial levels..." (p. 25).

A threatened self-concept may get in the way. A CEO of a large non-profit has been carrying on an e-mail conversation with me because his board is wanting to use 360-degree feedback to determine which volunteers to fire. He admitted that he did not know any of the research on 360-degree feedback nor did he know where to find it. Further, though, he observed that "most people ignore research because research points out the warts, and most people don't want to be reminded of their blemishes."

How Can the Situation be Improved?

The problems outlined above are not unique to the research-business connection in human resource development. It probably exists in most aspects/functions of business, and it is a problem that is certainly well known in the research-school communication in education. Cooke et al. (1993), for example, concluded that

> we need to find better ways of translating the results of research into more effective practice and of training teachers to access, interpret, and research in ways that will allow them to incorporate findings into their unique settings. (p. 319)

Research Context

Increased partnerships with businesses. As government funding decreases, it is being replaced by an influx of research funding from businesses. Not only does this ensure continuing funding for academic research, but it also suggests a closer tie between the focus of academic research and the needs of business, increasing the probability of implementation. This doesn't solve all of the problems, of course, as it opens up possibility for conflict of interest among all parties involved--the researcher, the university, and the business (Zolla-Pazner, 1994).

Differential staffing, which is within the control of most universities, would allow a commitment to research. While some faculty will still choose multiple roles, those who have expertise in research could dedicate more of their workload to that area.

Creative funding approaches will enhance funding available for HRD research. At the University of Minnesota, for example, we have tied research to our internship program. Companies working with our interns provide grants to the University that include a 20% overhead that goes to our Human Resource Development Research Center to fund research. While it hasn't provided million dollar grants, it has allowed for a significant amount of ongoing research.

Include dissemination in the reward structure. This may be a hard sell because most reward systems are systems-wide. However, some departments are allowed to create their own criteria or at least apply their own weights to the criteria. Such an approach could reward those who choose editor roles and those who are able to write in such a way as to bridge the research-practice gulf.

HRD Researchers

Professional organizations, both scholarly and practice, have a responsibility to create bridging opportunities. Conferences could well focus, either in part or in whole, on the question of transitioning research to practice. They could sponsor journals with the specific purpose of creating such a bridge; this is the mission of the newly launched *Human Resource Development International*, the new journal to be published by Routledge with AHRD as one of its three sponsors. Swanson's vision for this journal is that it will become the *Harvard Business Review* for HRD. This is a worthy goal that will move the field forward in both research and practice. They could hold conferences in which practitioners can help researchers understand what is important to them in their business contexts.

A monograph published by the Academy with suggestions for journal outlets, along with their criteria and formats, would aid researchers in seeking multiple outlets for their research written very differently for different audiences. Cathy Sleezer has done some preliminary research identifying major outlets for research in the field of HRD. If this could be carried to the next step, I believe it would go a long way to bridging the publication gap and provide researchers with additional citations for their resumes.

As the use of the internet matures, criteria will be established to protect intellectual property and provide checks on validity that will ultimately allow researchers to claim such publications as refereed.

The emergence of multi-disciplinary programs, conferences, professional organizations, and journals will provide researchers with many more opportunities to bridge the communication gap in ways that will reward them in traditional ways

Researchers need remediation in writing. Another task that professional organizations can undertake in their conferences is to offer workshops in writing for understanding and implementation. Gersten and Brengelman (1996) found that

> to be useful, research must be able to be translated into manageable and comprehensible ...strategies and procedures. Further, these strategies must reflect and fit within the *details of day-to-day...instruction.* (p. 68)

This style of writing can be taught and researchers can learn to change how they write so practice can, in fact, be impacted.

Dissemination

Journals that bridge the theory-to-practice gap will improve dissemination.

Research translation columns in popular trade journals will also help.

Partnering of authorships and editorships between practitioners and researchers will allow each to serve as a check on the other to ensure quality research that communicates easily to practitioners.

Electronic media will allow interactive, real-time conversations to improve communication between researchers and practitioners.

Electronic media will also require researchers and practitioners to take a broader global perspective.

Listservs for dissemination of research should be established with tight controls, such as a webmaster functioning as an editor would function, to ensure a "Seal of Good Housekeeping" and confidence that the information is sound.

Consult with integrity. This was the focus of last year's conference. As academicians, we are in the best possible position to turn down assignments that run counter to research's best practices. We don't rely solely on our consulting income to survive as many consultants do. We have our base salaries and our benefits from our universities. We can make a difference if we are willing to stand up to bad practice and consult with integrity.

Journal articles could require a capsule summary for action. An internal HRD consultant in a Fortune 100 company suggested that research articles should have "presentation-ready visuals" that could be used immediately in the workplace. But don't hold your breath on this one. Kaestle (1993) cited the example of a US Department of Education (1986) publication that summarized best practices for classroom instruction based on a summary of exhaustive research and validation. It summarized 41 practices in a widely disseminated publication. It had almost no impact. The conclusion was that "the print and the dissemination media, no matter how skillfully done, won't work" (p. 27).

Business Context I find this category the most difficult in which to make recommendations for change.

Use cost-benefit analysis. If businesses are driven by the bottom-line, then HRD and HRD researchers must be prepared to present best practices from research in dollar terms. We have the tools; we just don't use them often enough.

If you can't fight 'em, join 'em. Peter Senge (1990) did a real service to HRD with his publication of *The Fifth Discipline*. He was able to take complex theoretical issues and put them before business people in a way that got their attention. Why aren't more of us in this field writing such books that don't rely solely on a fad but that are based on sound theory and research?

HRD Practitioners

Provide practitioners with coursework in research. For classroom teachers, Cooke et al. (1993) found that their research attitudes were positively affected by

> (a) coursework in a related area (e.g., educational research, applied behavior analysis), (b) previously conducted research, and (c) completion of an advanced degree (i.e., master's level or above). (p. 326)

There is no reason to assume that the same wouldn't be true for HRD practitioners. As the field matures, we are seeing the master's degree becoming the degree of choice for people who are committing their careers to HRD. With that, should come increased acceptance of research and its application.

Include research in individual development plans. This is similar to the above, yet is more individually focused than programmatically focused.

Get them at our scholarly conferences where we can interact and learn from each other. Of all suggestions in this section, if we could get this to happen, we'd start to see a real change in the transfer of research to the workplace.

Conclusion

The gap between research and practice will not be closed easily nor quickly. However, there are enough pieces that are "broken" that major improvement can occur with relatively small investments. Systemically, we are facing a very long-term "fix." But as with anything for which there is a true commitment, the time to begin the long-term fix is now. As a professional organization and as members of a profession, there is much that we can do, starting with this conference, that will move us in the right direction. Let's begin to cross that bridge so we will see our research have real impact in those organizations that have an HRD function--and are there any that don't?

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Comparison of Student Reactions in Traditional and Videoconferencing Courses in Training and Development

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The purpose of this study was to provide information on student reactions to a videoconferencing-based course as compared to a traditionally-delivered course in training and human resource development. A classroom-based section and a videoconferencing-based section of an introductory training and development course were taught by the researcher. Course evaluations indicate that students in the traditional classroom were more likely to agree that the instructor used class time effectively and that the instructor allocated sufficient time for class activities.

In 1995, the University of Wisconsin-Stout implemented a new master of science degree program in Training and Development. This program, designed to prepare students for professional positions in the field of human resource development, includes courses in needs analysis, program design, materials development, delivery systems, program evaluation, adult learning and organization development. Demand for this program has been extremely high. Individuals from all parts of the state are interested in pursuing a graduate degree in this area. However, many of these potential students are adults who are working full time and who would not be able to attend courses at the UW-Stout campus in Menomonie. Thus, there was a need to explore alternative delivery systems for these graduate courses.

Several delivery systems were considered including holding weekend courses in cities throughout the state, offering computer-based courses and offering videoconferencing courses through a compressed video system or a fiber optic network. It was decided that the university would pilot three types of alternate delivery systems for the training and development courses during a two-year period between 1995 and 1997. Weekend courses would be offered at a city located in the central part of the state; two courses would be delivered through computer conferencing; and five courses would be delivered via videoconferencing. The courses would be developed, delivered and evaluated during this time period. Then decisions would be made in terms of offering the entire degree program through an alternative delivery system. The study described in this article deals exclusively with the development, delivery and evaluation of the first videoconference course.

This course, Training Systems in Business and Industry, is a general survey course that provides an overview of employee training systems in the United States and an introduction to the various models used to design, deliver and evaluate training processes and programs. It is a prerequisite course for all students in the master's degree program.

It was decided to deliver this course using two videoconferencing technologies: the WONDER Network and compressed video. The Wonder Network (Wisconsin Overlay Network for Distance Education Resources) network is a fiber-optic network dedicated to connecting classrooms at nine universities and technical colleges throughout the state. This network, which became operational in the fall of 1995, is a full-motion, high quality, video-conferencing system that allows up to four sites to be connected and viewed simultaneously. Sites that are not currently part of the system can be connected to the network through compressed video or other technologies.

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The videoconferencing format was chosen for a number of reasons. First, it would provide relatively easy access to students located in various parts of the state. Second, this format would allow for two-way audio and video communication between the students and the instructor. In addition, according to a 1995 study, 18% of all U.S. companies with more than 100 employees are using videoconferencing to deliver employee training (Industry Report, 1995). Therefore it would be appropriate to model the use of this technology to students who may need to use videoconferencing systems when they are working as training professionals in the field. In addition, the students would be able to obtain experience using this type of technology to deliver instruction.

Statement of the Problem

Little is known about the effectiveness of delivering training and development courses through videoconferencing. Few studies have examined the use of videoconferencing systems in master's degree programs in training and development or how graduate students react to training and development courses being delivered in this manner. The purpose of this study is to provide information on student reactions to a videoconferencing-based course as compared to a traditionally-delivered course in training and development.

Hypothesis

Although little research has been conducted in the use of videoconferencing in graduate training and development programs, most research evaluating the outcomes of distance learning in higher education has shown consistent positive results (Kendall & Oaks, 1992). No differences, in terms of achievement, between traditional instructional methods and distance learning have been proven. In addition, students have shown positive attitudes toward distance learning. Therefore, the hypothesis for this study was that there would be no significant differences in student reactions between students in the traditional classroom and students in the videoconferencing group.

Literature Review

The use of distance learning in higher education is expanding. According to a 1995 Internet survey of campuses, 55 percent of the 300 respondents indicated that their campus was involved in distance learning, mostly providing credit courses (Sherron, 1995). There were a number of delivery systems being utilized by the respondents, including electronic mail, print, videotape, computer-based and audio-based formats. However, the survey results indicated that the most dominant technology for the delivery of distance education was two-way, interactive television, with one-way television a close second. Over past few years, there have been several studies conducted to determine if telecourses are as effective as traditional courses in higher education. Researchers have attempted to evaluate achievement of learning objectives, course completion rates, student reactions and instructor effectiveness in the television classroom.

A recent study at John C. Calhoun State Community was conducted to determine if there was a significant difference in grade distribution between sections of a course using a telecourse format and sections taught by the same instructor in the same term utilizing a traditional classroom format (Searcy, 1993). The study, which examined data from 18 telecourses and 18 traditional courses concluded that there was no significant differences in averages grades between students in the telecourses and students in the traditional classroom. However, the results indicated that student completion rates were higher in the traditional sections.

In another study, 31 graduate students enrolled in a teacher education course that was delivered through a satellite network were surveyed to determine their reactions to the course. The responses indicated that the majority of the students felt the satellite course was either as interesting or more interesting than traditional instruction, and that they would enroll in another course offered through this technology (Barker & Platten, 1988). However, a study conducted by Ritchie and Newby compared the reactions of college students in three classroom environments: traditional classroom, television classroom with instructor and a distance education classroom with no instructor present. The results of this study indicate that the students in the distance classroom rated their experience as less enjoyable and believed they had a lower level of involvement than the students in the other two class settings (Ritchie & Newby, 1989).

A study at Texas Tech University examined learning styles, academic achievement, attitudes toward learning environment and course completion rates of graduate students who attended an education course (Gee, 1990). One group of students was on campus, the other group was at a remote learning site. Both groups were taught simultaneously using the same course content. Although there were few significant differences between the two groups on the variables examined, the results indicated that learning style preferences may affect academic achievement and attitude of students involved in both traditional classrooms distance learning.

In a study that is most similar to this study, 45 graduate students who had completed one or more telecourses in the Master's Degree program in Adult Education at the University of Wyoming were surveyed and 15 students were interviewed regarding their perceptions of the courses (Silvey, 1994). The majority of students expressed positive opinions regarding the content of the course and the delivery system used. Students were most dissatisfied with the administrative support for distance learners and the lack of orientation they had received in regard to this approach to learning. Nearly all of the respondents said they would recommend the telecourses to others.

Finally, a study at Washington State University compared the perceived effectiveness and satisfaction of university faculty teaching in traditional and telecourse settings (Kendall & Oaks, 1992). In general, the 46 instructors surveyed were satisfied with the instruction they provided over the interactive television system. However, the respondents expressed concern over the lack of student-teacher interaction and class participation in the distance classes.

Methodology

This study utilized a quasi-experimental method to compare effectiveness of a traditional course to the effectiveness of the same course taught via videoconferencing (WONDER network and compressed video). During the fall of 1995, the researcher received training on the use of the videoconferencing hardware and software and spent several hours developing lessons and materials for use in the distance learning course. During the spring of 1996, two sections of the introductory training and development course "Training Systems in Business and Industry" were taught by the researcher. One section was taught to 28 students on campus utilizing a traditional classroom setting. A second section was taught to 12 students in four cities across the state via the WONDER network and compressed video technology. The WONDER sites included Chippewa Valley Technical College in Eau Claire, North Central Technical College in Wausau and Fox Valley Technical College in Appleton. In addition, a site at UW-Milwaukee was connected via the PictureTel compressed video system. It is noted that the unequal number of students in each class may effect the results of study. In future semesters, it is anticipated that there will be larger groups of students in the distance learning courses.

Both the traditional course and the distance learning course met for three hours per week for 16 weeks. Both classes followed the same syllabus, covered the same content and used the same assignments and projects, including a final group presentation. The instructor communicated with the students at the distance sites through mail, fax, telephone and electronic mail, although not all of the off campus students had Internet access. Therefore the instructor was unable to utilize discussion lists or other Internet resources to facilitate communication. Each videoconference class was videotaped in case of technical difficulties at any of the sites. In addition, these videotapes were used by the instructor for self-evaluation. This allowed the instructor to learn firsthand which methods techniques were successful in each of the class sessions (Hirth, 1993).

A variety of instructional methods were used in both classes including lectures, small group discussions, large group discussions, demonstrations, case studies, games and simulations. There was also extensive use of instructional media including overhead transparencies, videotape, and CD-ROM. A number of computer-based training programs and Internet resources for training were demonstrated during both classes.

There were also guest lecturers in both classes, including training directors from organizations such as Miller Brewing and Wausau Insurance. In the videoconferencing class, some of the guest presenters spoke from the various distance sites. This arrangement was used to help the participants at the remote sites feel more connected and less like spectators (Smith, 1996). In addition, the traditional class spent one class period touring the training facilities for a state plastics manufacturer.

Nearly all of the students who began the courses completed the course at the end of the semester. One student dropped out of the traditional class due to health reasons. There was also a student in the telecourse who was experiencing health problems; however, she was able to remain in the course by watching the videotapes, having phone discussions with the instructor and the other students, and continuing to submit assignments and projects. The student in the traditional class was given the option of completing the class through self-study but chose to repeat the course at a later date

At the conclusion of the course, every student was given a course evaluation to complete and return to the instructor. The evaluation instrument contained 18 items covering the following five areas: instructor preparation, presentation methods, class time utilization, instructor-student communication and evaluation methods. The students were asked to provide their opinions on each item by indicating their degree of agreement or disagreement on a four-point, Likert-type scale. There was also space at the end of the form for students to write in comments or concerns. This instrument, which was developed by a team of UW-Stout faculty members, has been used by approximately 25 instructors in the Communication, Education and Training Department at UW-Stout each semester for the past six years. Individual and department means on each item are calculated and results are shared with instructors for the purpose of instructional improvement.

The students did not write their names or place any other identification on the forms. In the traditional class, a student delivered the completed forms to the department office of the researcher. In the distance section, each student was mailed a form and a postage-paid envelope to mail his or her completed form to the department office. One-hundred percent of the students in both of the sections returned the evaluation forms. The forms were then delivered to the campus computer center for data analysis. Percentages, means and standard deviations were calculated for each item in both of the classes. Then t-tests were conducted to determine if their were significant differences between the two classes on any of the items.

Results

The results of the evaluation forms indicated high levels of student satisfaction with both of the courses (see Table 1). In 2 of the 18 items there were significant differences between the traditional students and the distance education students. In these items, students in the traditional classroom were more likely to agree that the instructor used class time effectively and that the instructor allocated sufficient time for class activities. Overall, there was a great deal of similarity in the responses of the two groups.

Overall student comments from both sections of the course were extremely positive. In general, students wrote that the course was well organized and covered relevant material. There were also several positive comments about the subject matter knowledge, overall presentation skills and positive attitude of the instructor. Students from both groups also commented on the large number of assignments and projects in the course, and some students felt the workload needed to be distributed more evenly throughout the semester.

However, there were a number of comments that appeared only from students in the videoconferencing group. Although several students indicated they appreciated the convenience of taking the course near their home, there were also some concerns about this method of delivery. These included concerns about class time being lost due to occasional technical difficulties with the equipment, difficulty scheduling time for group work among working adults living different cities, and the inability to interact with the instructor in person during class sessions. Finally, some of the distance students indicated they would have preferred a more extensive orientation to the distance learning system during the first class session.

Table 1

Comparison of items on students evaluation forms based on course delivery system

Statement	Students		
Degrees of Freedom = 38	Campus (N=28) *M*	DE (N=12) *M*	*t*
The instructor showed evidence of advance planning for this course.	3.96	4.00	.64
The instructor showed evidence of advance planning for class sessions.	4.00	4.00	—
The instructor explained course objectives and evaluation procedures.	3.93	4.00	.91
The instructor used appropriate instructional materials.	3.89	3.92	.22
The instructor showed enthusiasm for his or her subject.	3.96	4.00	.64
The instructor posed challenging questions and stimulated discussion.	3.68	3.75	.43
The instructor varied the instructional methods used.	3.68	3.75	.39
The instructor used class time effectively.	3.96	3.75	2.12*
The instructor allocated sufficient time for class activities.	4.00	3.83	2.31*
The instructor met with the class on time and regularly.	4.00	4.00	—
The instructor treated all students equally.	3.82	4.00	1.50
The instructor was fair in class discussions	3.86	3.83	-.19
The instructor was available outside of class.	3.79	3.75	-.24
The instructor provided personal assistance if needed.	3.89	4.00	.90
The instructor had a positive attitude toward me.	3.93	3.92	-.13
Tests and quizzes covered the assigned content.	4.00	4.00	—
The instructor reviewed all tests and quizzes.	3.96	3.91	-.42
Evaluation methods were based on course objectives.	4.00	4.00	—

* = significant at the .05 level

Conclusions

Based on the student data, it can be concluded that there were very few differences in the reactions of students who completed the videoconferencing course and students who completed the traditional course in Training Systems in Business and Industry. In 16 of the 18 items included on the course evaluation form, there were no significant differences between the two groups. Therefore, the hypothesis for this study was supported. It can be concluded from these data that student reactions to the videoconferencing course were generally very positive and that videoconferencing may be considered an acceptable delivery method for graduate courses in training and development at UW-Stout. Because of the nature of this degree program, the use of videoconferencing may be particularly appropriate as it may be used to provide students with the knowledge and skills needed to solve instructional or training problems, specifically those associated with geographically dispersed trainees (Wagner, 1992).

The results of this study and several other similar studies appear to indicate that one of the keys to success in distance learning is the instructor (Barker & Baker, 1995). With a well prepared instructor, the technology itself can become almost transparent. However, no technology can overcome lack of preparation or poor teaching skills. Therefore distance education instructors need to be thoroughly trained in how to use the technology, demonstrate polished presentation skills, create opportunities for interaction, develop materials and use media effectively (Barker & Baker, 1995). This researcher and others have observed that it takes a great deal more time to prepare for distance class sessions and more effort to compensate for the physical separation from students (Hirth, 1993).

Based on the data from this study, instructors teaching videoconferencing courses may want to consider the following recommendations. Distance educators may want to spend part or all of the first class session providing an orientation to the system and explaining how the course will be conducted over television. Allowing the students to practice using the equipment and to become comfortable with the technology is important. Distance instructors may want to consider using class time differently than they would in a traditional setting and allowing students more time to work on group projects and activities during class. Instructors may also consider arranging for all of the students to meet at least once in person or visiting each of the distance sites at least once during the course to meet and interact with the students. Following these recommendations may help to increase interaction and decrease feelings of isolation in the distance learning classroom.

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The Development of Common Core Learning Outcomes for HRD Professionals which have Currency across National Boundaries: A European Case Study.

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This paper describes a 3 year study developing a set of learning outcomes which reflect the range of HRD practices professionals operating in a European context should be able to demonstrate knowledge of and competence in. They are based on an analysis of Masters degree syllabi from European Universities forming the EURESFORM network and have been field tested for practitioner relevance. The outcome is a EURESFORM certificate recognised by the member universities.

One of the consequences of the intensifying global competition and technological advances of the 1990's is the need and - in conjunction with the development of global communication networks opportunity for greater transnational sharing and transfer of learning. Training and Development managers and other HRD practitioners must discover how to operate across national boundaries, as part of the on-going professional process of learning from others and imparting learning to others. One of the lessons of the past is that countries cannot afford to be ethnocentric and assume that a given nationality is the repository for all that is best. Yet there has been very little empirical research into whether there is a convergence (or indeed a divergence) in HRD practices in different countries which might help govern trans-national learning and communications. Is there a common core of activities which reflect HRD practice across a variety of national spectrums? How can emerging practice be transmitted across national and linguistic boundaries in a way that makes sense? It is against this backcloth that the European case study has been conducted.

The Role of Universities In the Evolution of HRD Practice Universities offering practitioner-oriented Masters level HRD programmes have a key role to play in the development and assessment of international standards and practices for the profession. University course designers can facilitate convergence by sharing ideas on programme inputs and outcomes, incorporating features from other programmes as appropriate. This has often been done at the national level. It is far less common at an international level. Indeed European Universities have no agreed set of HRD programme outcomes which meet the following conditions. 1. They can be demonstrated by individuals successfully achieving Masters level qualifications taken in different European countries. 2. They are recognised as professionally relevant across the national boundaries of European Union member states. 3. They satisfy the needs of employers looking for high-level practitioners with the breadth and depth of knowledge to operate transnationally as well as domesticallv.

The Case Study This case-study based project describes a transnational, European, inter-university approach leading to the production, testing and certification of a set of HRD programme 'core learning outcomes' which are designed a) to cover the core role requirements of HRD practitioners operating within their own country and b) to indicate to employers that certificate holders have a proven ability to transcend national cultural boundaries. The outcomes can be seen as a set of occupationally specific 'standards' which are intended to be precise, agreed and generally applicable descriptions of what HRD professionals operating in the European arena are expected to be able to know and do. Certification should be awarded on the basis of valid and

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reliable assessments, made in such a way as to ensure that demonstration of the 'standard' can be achieved in the work situation. Establishing such a set of standards becomes particularly daunting when trying to get agreement from centres operating in different countries with their own traditions, sensitivities and languages. Indeed, one of the most significant learning points from the case study has less to do with the physical generation of the standards than with understanding the 'soft communication skills' used in the process of their development.

Research questions Through the medium of the case study the following research questions are addressed. Can a set of HRD outcomes be specified which would satisfy the needs of practitioners/professionals operating in more than one country? How many such outcomes should there be, and of what order of generality? Can agreement be obtained on these outcomes from University providers representing different European Union member states? Can such outcomes be assessed in a way which would meet the needs of employers? Can such outcomes be certificated by providers (universities) from more than one country? Where would such outcomes fit into existing qualification structures such as Masters degrees offered by individual universities?

Hypotheses The case study has operated under a series of working hypotheses. The first is that there is a convergence of practices in HRD across European Union member states as a consequence of macro European initiatives and of globalisation pressures. such a working proposition only presupposes common ground. arguing for a convergence of practice is not the same as saying that there is a uniformity of practice or that each country has reached the same state of development in terms of its understanding of HRD. The second is that universities as centres of learning have a key role in terms of expanding and disseminating knowledge and good practice. For that to take place their programmes should reflect an awareness of domestic and international practices happening 'out there', a process facilitated by programme directors across the international community working together and sharing ideas. The third is that an outcome driven model, based on assessing a set of predetermined standardised outcomes, is a more effective way of achieving agreement on professional HRD qualifications recognised across national boundaries, than an input driven model based on a common syllabus. The fourth is that there is a demand for the articulation of a common set of standards to underpin emerging HRD practices across Europe.

Methodology

The methodological approach to the case study and the generation of the learning outcomes is located within a phenomenological, interpretative paradigm, with an emphasis on seeking and imparting shared meanings. The case study is essentially a piece of action research. Easterby-Smith et al (1991) contend that there are two features normally apparent in action research projects. '1. a belief that the best way of learning about an organisation or social system is through attempting to change it, and this therefore should to some extent be the objective of the action researcher; 2. the belief that those people most likely to be affected by, or involved in implementing, these changes should as far as possible become involved in the research process itself.' (Easterby Smith 1991 p34) Both of these features figured strongly in the approach to the study. Accordingly the case study adopts an essentially ethnographic perspective - the researcher is part of the system under study. It incorporates both comparative and longitudinal elements, and entails revisions - as appropriate - to hypotheses on the basis of field based research data.

The supporting methods include 1. Comparing and contrasting the learning approaches represented in the different programmes, and gaining an understanding of national similarities and differences in qualification design. 2. developing a set of outcomes which represent the core features of HRD practices across a range of those European countries involved and incorporating these into programme assessment. 3. Testing the outcomes in each country represented by the network through techniques such as repertory grid analysis, modifying as necessary.

The initial development of the core learning outcomes is based on one individual (the author of this paper) acting as 'expert' on behalf of the broader interest community, who drew upon field knowledge and 'cognitive grip' within a given thought world and who relied upon interpretation acumen. In this context, a 'thought world' can be defined as 'a community of persons engaged in a certain domain of activity who have a shared understanding of that activity'. (Dougherty 1992) The given 'thought world' or 'domain of activity' is of course that of HRD. The 'broader interest community' are the constituent members of EURESFORM, the European network of university providers of Masters degree level professional HRD programmes which functioned both as commissioners of and participants in the research exercise. That 'permission' was given by the 'broader interest community' to one of the constituent members entailed a degree of trust that would not have been possible if the EURESFORM network had not been in existence for some time.

From the original development of learning outcomes, each constituent member of the EURESFORM group became 'researcher' and 'expert', drawing upon their own field knowledge and cognitive grip to check out meaning within their own framework for HRD. The proposed learning outcomes were subjected to translation into the languages of the respective countries. Students on the respective Masters programmes also became participants in the research and their field knowledge was drawn upon as the 'broader interest community' was extended. These 'students' were all in full-time employment, experienced practitioners in their own right, and coming from a broad spectrum of HRD work backgrounds.

In the hermeneutic tradition, syllabi from the various University programmes were treated as 'texts' and became one of the description vehicles to provide the researchers with raw data and thematic content enabling cross comparisons and interpretations to be made. However, the researchers did not rely unduly on textual interpretation. Syllabi tend to be historical in terms of their content and reflect when they were written. In a dynamic arena such as HRD what is written can quickly become outdated. To compensate for this, emergent themes from the literature and from each country's practice were drawn upon and discussed collectively. This ensured that more was derived from what was happening in the field. Throughout discussions members were treating each other as experts, and in learning from each other were articulation new insights and understandings. Raw data and themes based on the syllabi and the EURESFORM meetings were converted by the author into a composited set of 'standard terms' acting as domain specific anchors. These operated as an acceptable compromise in terms of internal homogeneity and level of compression. (Laukkanen 1994) These 'standard terms' after refinement and field testing were the core learning outcomes, the English version of which is given below.

Core Learning Outcomes EURESFORM To achieve EURESFORM Professional Recognition candidates acting as a manager or consultant will have been assessed against their ability to 1. Act in their professional dealings according to professional standards. 2. Demonstrate a comprehensive approach to managing human diversity and providing equality of treatment in professional dealings. 3. Act as a consultant (internal or external) to an organisation, taking into account its complexity and the dynamics of the provider-customer relationship 4. Know how to carry out a strategic appraisal of own or client organisation's strengths and weaknesses, with particular attention to its human resources. 5. Know how to conduct an environmental analysis, including key external human resource factors, identifying issues which influence organisational policy. 6. Conduct an internal and external stakeholder analysis to situate one's position and the role of HRD in the organisation. 7. Establish an information system to identify current internal and external trends in HRD and feed the information back to the organisation. 8. Know how to develop appropriate HRD structures and processes to enhance organisational ability to respond to strategic issues/problems 9. Establish the relationship between Human Resource Planning and the identification of competences required. 10. Know how to draw up an HRD policy for an organisation incorporating as appropriate internal and external employee and non employee development needs. 11. Contribute to designing, facilitating and evaluating processes of change which promote organisational learning 12. Evaluate the advantages and disadvantages of outsourcing as opposed to in-house delivery of HRD programmes 13. Negotiate with decision makers to obtain and allocate physical, human and financial resources to achieve policy objectives. 14. Influence managers and stakeholders to support HRD. 15. Develop an internal or external marketing plan for HRD. 16. Carry out job analysis, define clusters of competences and develop appropriate processes (including organisational) to build on those competences 17. Distinguish between and recommend training and non training interventions to the resolution of organisational issues. 18. Translate HRD policy into training plans using appropriate project management and financial management methods. 19. Produce appropriate cost/benefit analyses and performance indicators to evaluate corporate HRD initiatives. 20. Evaluate HRD programmes at learning, behaviour and job performance level and then design appropriate modifications. 21. Manage effectively an HRD budget including cost control. 22. Produce a dissertation level document which demonstrates a critical understanding of the problems and opportunities of research in the HRD field whilst retaining a strong focus on practical and implementable outcomes for action. 23. Understand HRD practices in the European Union. 24. Resolve an HRD issue to the client's satisfaction in a European country other than ones own.

The actual wording of the outcomes reflected syllabus content, but was not written in identical terms to those found in any of the individual syllabi. Some of the outcomes were not represented in any of the original syllabi, but were incorporated as important themes. One of the issues around the 'standard terms' was that they did not always translate readily from one language to another and were capable of misinterpretation. Handling this question of 'translation' and providing for 'portability' of meaning and understanding across languages is one of the key issues arising from the case study.

Use of Repertory Grid The Repertory Grid is a derived technique from Personal Construct Psychology (Kelly 1951) for identifying the basic bipolar expressions which make up an individual's construct system wherby personal meaning is given to events. Repertory Grid analysis can also be used to identify the meaning which a whole group of respondents share about a topic of common concern. This originated from a method of content analysis developed by Honey (1979) and for which a very high degree of reliability can be obtained. It is this use of Repertory Grid analysis which was drawn upon as a case study method to test out the importance attached to the learning outcomes.

Narrative Background to Case Study and Research Activities

The three year research project was undertaken through the auspices of EURESFORM, a European network of universities and other Higher Education Institutions providing post-graduate qualifications for Human Resource Development (HRD) practitioners. U.K members include London Guildhall University and Lancaster University. Other members include the University of Barcelona (Spain); the University of Tilburg (The Netherlands); the Conservatoire National des Arts et Metiers (CNAM) (France); the Irish National College of Industrial Relations (Eire).

The aims of EURESFORM include the mutual recognition of European wide HRD qualifications; exchange programmes for HRD staff and students; promotion of contacts between alumni of networking institutions; sharing knowledge through workshops, publications and research. In October 1993 European funding was successfully sought for development work on establishing a mutually recognised European Core HRD programme.

In January 1994, at a weekend meeting held in Barcelona the HRD programmes of each of the participating institutions were translated into English and compared in terms of structure and outcomes. It quickly became apparent that there were substantial differences in approach to programme design which would be extremely troublesome to overcome if one adopted an input-driven approach. For example there was no consistency on how many hours of study made up an accredited Masters course. Even more significant were institutional rules to do with course validation and obtaining course approval, which differed not only country by country but also university by university.

In June 1994 at a further meeting at Leiden in Holland it was agreed that the simplest way forward was to work towards a EURESFORM Certificate which would be recognised by each of the participating institutions. It would contain the logo of each of these Institutions and would list 20 or so learning outcomes covering core HRD themes common to the profession irrespective of the country in which practised, and also European based outcomes specifying that certificate holders had a) demonstrated knowledge and understanding of HRD institutions and practices across Europe. b) successfully conducted some action research as an HRD consultant in a European country other than their own.

Each participating institution would need to incorporate the agreed learning outcomes into their own programmes if their students were to achieve a EURESFORM accreditation. In order to ensure quality control, each Learning outcome would need to be assessed by both the 'home' institution and be externally validated on a sample basis by their external examiners. On October 1994 in Paris a set of core learning outcomes based on the Programmes of the member universities which could form the basis of the certificate of accreditation were discussed. These had been developed in the interim by the writer of this paper.

These outcomes were translated into the languages of the member institutions and checked out with students and practitioners in the field for their clarity and comprehensiveness. At the next meeting, in Paris in March 1995, they were refined and modified to incorporate views expressed. Further field work has since taken place and examples are reported below. At the EURESFORM meeting held in July 1995, they were finalised prior to publication. Arrangements for certification were discussed. Since then three further meetings have taken place, two in Paris in Autumn 1995 and 1996 and one in Barcelona in Spring 1996., at which attention was given to ensuring that the ongoing work on the testing and certification of the learning outcomes continued. The first EURESFORM certificates were awarded in January 1997.

The next research objective, building upon the 'core learning outcomes' is to develop a European 'personal skills card' or 'passport of competence' for training instructors, administrators, managers and other HRD practitioners. This will form a record of individual vocational achievement incorporating a European skills and knowledge dimension that will be of value to employers and linked to life-long learning and continuous professional development. EURESFORM is seeking industrial partners operating on the European stage to become involved in the development process.

A number of exchange visits have taken place between students of the incorporated institutions to facilitate the achievement of learning outcomes 23 and 24. For example, in May 1996 the University of Tilburg hosted a group from London Guildhall University, followed soon after by a similar group from the University of Barcelona. EURESFORM has developed a set of guidelines for these Exchange visits. The focus of the exchanges is to provide opportunities for mutual exchange of information, views and ideas on training and HRD issues with practising training managers and HRD practitioners of the hosting countries and to make international comparisons. There must be a structured exchange with HRD colleagues from a similar vocational area (industry, public services, health etc.) involving a brief introduction to the host organisation, its current development; introduction to the key factors and data of a problem, a current situation that has been/is managed by the HRD specialist; visitor's approach to the solution of the problem to the host's satisfaction.

Example of Field Workshop on EURESFORM Learning Outcomes In April 1995, a one day workshop was held at London Guildhall University to obtain the views of a number of past and current MSc HRD students on a March 1995 version of the Common Core Learning Outcomes.

Questions for workshop. 1. The outcomes have been translated from English into French and back into English. Do they make sense? Would you change any of the wording to make them clearer? 2. Are they sufficiently comprehensive? Do they provide a set of outcomes which you would expect an HRD practitioner operating at European level should be able to demonstrate? anything you would add? Delete? Modify? 3. Which of the learning outcomes do you think you would be able to demonstrate by accreditation of prior certificated learning and accreditation of prior experiential learning? How would you demonstrate this? 4. Which of the learning outcomes do you feel you currently would not be able to demonstrate? How might this be rectified? 5. Would you be interested in seeking a Euresform Certification? What do you think its market value is? 6. Any other points you feel would be helpful? The following summarises the key points arising. *Question 1.* On the whole the outcomes madesense but needed some modification to make them clearer. The participants provided suggestions for revised wording. *Question 2* The outcomes seemed to be comprehensive and to cover the field. There was some feeling that the European dimension was understated and could be developed. *Question 3* Answers depended on what previous qualifications participants had undertaken before going on to do the Masters. All present felt they could demonstrate the theoretical 'know how to' outcomes with the exception of that dealing with an understanding of the HRD practices in the European Union. Some representatives felt they also could demonstrate all of the practical learning outcomes with the exception of the European component. *Question 4* One representative said that she had never been assessed against some of the practical areas and had never had to manage an HRD Unit. No one considered they could demonstrate the European learning outcomes. *Question 5.* It was felt that the market value of a EURESFORM qualification depended on the outcomes being seen to be vocational and practical by both students and employers. The question was raised whether proficiency in EU languages could be recognised since this could add to its market value. One solution proposed was to have a 'EURESFORM Certificate with languages' - and list the languages for those students who could demonstrate proficiency in more than one language. The question was also asked whether existing Masters (and supporting Certificate\Diploma) qualifications in HRD could be modified to incorporate the learning outcomes, and marketed in the UK as an 'automatic accreditation' to successful students. This was considered by those present to be a desirable step forward. *Question 6* It was felt to be unclear whether the outcomes led to a 'qualification' or an 'accreditation'. The balance between 'know how to' outcomes and those requiring practical demonstration was discussed in general terms. It was felt that the emphasis should be on practical demonstration if the qualification was to have any market currency. It was also felt that how easy it would be to demonstrate the outcomes in practice depended on individual candidate's job role.

Similar workshops were held at CNAM and at Lancaster University, and the conclusions fed back to the EURESFORM research group. They have been influential in refining the outcomes, and helping individual member institutions to modify their Masters programmes to ensure that they can be more effectively met.

The Use of Repertory Grid At the University of Tilburg one of the students, Mrs. drs Hanneke Visser, organised a Repertory Grid focus group exercise in 1995 on the learning outcomes as part of her Masters Dissertation (Visser 1996). The objective was to prioritise the learning outcomes in terms of their relative significance for members of the focus group. She was able to draw upon a proprietorial software package developed by the consultancy Group 'Priority Search', modified for the exercise.

Each member of the focus group was provided with the Learning outcomes organised in pairs with 3 line in between. For example,

Act in their professional dealings------------------------- Evaluate HRD programmes at learning,
according to professional standards behaviour & job performance level

The instructions were that for each pair, individuals should choose the outcome most significant to them in terms of their current job role by putting a mark (one only) on the appropriate point on the line. The closer the mark is to a given outcome, then the more important it is to the individual. If the individual finds both outcomes equally important or unimportant, then the mark should be put in the middle. Every learning outcome appeared three times, on each occasion paired with a different outcome. Individual forms were then scanned and an overall priority list resulted. The software package was also able to differentiate between preferences on such factors as gender.

Subsequently, a similar exercise at Tilburg was conducted with a group of HR practitioners from London Guildhall University in May 1996 to establish national similarities and differences, recognising that the groups were too small to make generalisable observations with any degree of validity. It was revealing (and somewhat disappointing) that neither the UK nor the Dutch Group felt that knowledge of European practices in countries other than their own were particularly significant in terms of their current job role. The Dutch group felt that managing diversity had little significance for them, nor did 'managing effectively an HRD budget including cost control', in marked contrast to the UK Group. Overall, however, both groups felt that the learning outcomes had salience for them. In terms of future research work, the use of this version of repertory grid analysis is highly promising for establishing areas of convergence and divergence between countries.

Issues of Corruption of Meaning in Translation

A central issue in an emerging area such as HRD is to obtain some reassurance that what is being talked about in one language is the same as that imputed after translation into another. This is particularly problematic when dealing with highly complex notions and generating a new vocabulary. HRD, as a field, is notorious for the technical use of vocabulary, words that elsewhere are used with totally different connotations, obvious examples being 'competencies' and 'development'. Even for those speaking the same language within the profession meaning is often hotly contested. As Megginson et al (1993) point out 'The same or similar terms and expressions can sometimes be associated with quite different meanings.....Such differences may not be problematic, but where confusion does exist it can seriously compromise people's attempts to work together in HRD......Don't assume that the people you are working with either share your understanding or are as well informed as you are. Effective working with others requires a common and shared comprehension of at least the basics which has to be established before action is contemplated.' (Megginson et al, 1993)

Because of the emergent and dynamic nature of the profession and its practices one cannot assume a common pre-existent knowledge base, even in-exchanges between practitioners in a given country. This becomes amplified in exchanges between countries where there may well be sensitivities if representatives from one country seem to be imposing their view of the world on others. Jankowitz (1996) challenges the assumption that to convey ideas, practices and techniques from one language to another, the only issue is the adequacy of one's translation. He holds that there is no guarantee in a translation exercise that the associations which terms carry in one language are automatically evoked in the minds of other nationals. For example, there are no indigenous words in the Slavonic languages for such basic terms as 'management', or 'learning' which convey sufficient associations for the 'western' concepts to be transferable in full. 'Management' is understood to mean simply 'governance', devoid of such English language associations as 'coping' or 'developing'. 'In short, adequate linguistic translation is impossible without the pre-existence, at some superordinate level, of a precise conceptual mapping between differing representations of the same phenomenon in the two separate cultures. Where this does not exist, 'translation' may succeed in a dictionary sense but will fail at the level of mutual meaning and understanding.' (Jankowitz op cit)

This is akin to the confusion and misunderstanding that can be encountered when delivering training across linguistic boundaries unless two interpreters are used - one to carry out the translation and the other to monitor and feed back the extent to which the intended meaning has been conveyed. Lee (1995) suggests that to ease the problem you need a 'cultural catalyst' - someone with a bicultural background who also possesses detailed subject-based knowledge.

We confronted this issue of loss and distortion of meaning in developing the EURESFORM core learning outcomes. The process entailed translation of the original by an 'expert'; subsequent checking out of meaning in the recipient country; modifications and rewording in the recipient language; retranslating back; checking for distortions and so on - a dynamic, on-going reciprocal process to establish shared meaning. This is one of the reasons, methodologically, for reducing the number of learning outcomes. The more that are presented, the more the problems of translation, interpretation and possible misinterpretation multiply.

The Development of 'Soft Communication' Skills

Language became an issue in a different way at the EURESFORM Meetings when the learning outcomes were discussed. At the outset it was agreed that all conversations would be conducted in english, the one language in which all participants were reasonably proficient. Nevertheless, for the majority it was at best their second language and proficiency varied.

In such meetings it proves helpful to see language as a symbol system used for encoding and modelling phenomena (Jankowitz 1996). This draws attention to the structural and functional issues of projecting meaning and to the constraints on what is possible to represent. Quite apart from not knowing basic meanings, misunderstandings can occur because of differences in grammar; in orthography (the limitations and constraints present within the symbol system and its articulation); in idiom (habitual ways of expressing meaning preferred within a culture) and in metaphor (the cultural associations which users find most useful in representing particular phenomena) To take a simple example of orthography, the english manager or the external consultant addresses colleagues, customers, subordinates and clients with the same personal pronoun, 'you'; the French manager or consultant will use tu to intimates and 'vous' when being more formal.

Our experience was that developing appropriate 'soft communication' skills was vital in securing the energy levels and commitment required to sustain the project and compensate for any language barriers. In this context, 'soft communication' skills relate to those mechanisms used outside of normal discourse to ensure that meaning is imparted and that people work effectively together. Thus 1. Where all discourse is held in English, use of idiom needs to be very careful and sparing. Idioms are, by definition, quite arbitrary, and must be learnt case by case if one is to be effective in a language other than one's own. Idioms are often not understood, or even worse, misunderstood by someone struggling to translate. 2. Ideas are more easily understood when represented in diagrammatic form. Wherever possible we would use white-boards or flip-charts to produce simple diagrams and models. 3. Visual display of the written word always facilitates understanding. All technical data (such as the learning outcomes) needed to be on display and checked out carefully for meaning. All the agreements needed to be handled similarly to give people chance to gain a full understanding before commitments were given. Seeming agreements were often changed as clearer understanding was achieved and permission was always given to go back over a point that had previously been discussed. 4. English speaking delegates needed to speak more slowly than they would normally, being quite careful in their choice of vocabulary whilst not 'speaking down' or seeming to 'speak down' to other delegates . 5. The fact that the chairperson did not have English as his first language helped control the pace of the discussions. 6. There was a need to develop 'double-density' observation skills, to recognise when individuals were losing concentration or getting tired because of the intensity of the interpretation process. 7. Timing of meetings was crucial. A full day, starting in the morning and finishing in the evening proved too tiring. Our strategy was to commence meetings in the afternoon, have a meal together in the evening to make a social occasion of the get together, and then reconvening the following morning for a further half-day.

Results and Conclusions

The outcome driven approach, based on the findings of this case study, is a more effective way of gaining international agreement than an input driven model, and has led to a satisfactory resolution of the research questions. The learning outcomes have been published in different languages to the satisfaction of EURESFORM members and their students and Certificates have been awarded. They are a 'first-generation' product subject to refinement and modification based on feedback from the 'broader interest community'. The number of outcomes should be kept relatively few (in the order of 20-25) and should be of quite a high level of generality, partly to facilitate translation - too many outcomes would create great problems in generating shared meaning - and partly because fewer outcomes will prove easier to assess effectively. At this stage we have no empirical evidence that they can be assessed in a way which would meet the needs of employers. The first certificates were only awarded in January 1997 and there is no data concerning their influence on any given individual's job success or career development. How such outcomes fit into existing qualification structures such as Masters degrees offered by individual universities has varied from university to university. Some have organised their qualification and assessment structure in such a way that the Masters degree automatically entitles a candidate to the EURESFORM Certificate. Others have seen it as an optional extra, requiring evidence of accomplishment additional to that in the Masters programme.

Where the decision makers are from different countries and for the majority English is not the first language, a key factor in achieving success in discussions is the development of 'soft' communication skills. It is especially important to be aware of nuances and potential corruption of meaning when translating the highly technical HRD vocabulary from one language to another. The research has contributed to new knowledge in HRD by 1. developing a composited set of domain specific learning outcomes that have currency across a range of countries and cultures and that are capable of being certificated to the benefit of individual and employer. 2. obtaining feedback from practitioners on how applicable common core learning outcomes are in their own country. 3. using Repertory Grid analysis with practitioners from different countries, to establish which of the outcomes have greatest and which least role significance, 4 By reporting back provisional comparisons between countries. 5. By the development of a field methodology to identify and assess HRD approaches and activities in different countries and enable tentative judgements to be made on the degree of convergence of HRD practice across Europe.

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The Video-Teleconference Distance Education Human Resource Development Graduate Classroom: Quantitative Evaluation Research Directed Toward Effective Practice

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This study reports on evaluation research on graduate level classes at Northern Illinois University in human resource development (HRD), delivered through video-teleconference distance education (VTDE). The authors discuss the approach to the course and provide analysis of the quantitative evaluation data.

Among the first video-teleconference distance education (VTDE) courses to be taught at Northern Illinois University (NIU) was a graduate-level course in human resource development (HRD). This course was delivered simultaneously to two classroom locations in the Spring and Fall semesters of 1995, and the Spring semester of 1996. HRD is an inter-professional field of study at NIU, drawing students from the program areas of adult continuing education, counseling, or instructional technology. The synergy produced by the mix of students is enhanced by the addition of interested students from other programs and departments, including business administration and public administration. The level of previous HRD experience among the students ranged from none to many years as practitioners in the field. The classes consisted of women and men who were recent college graduates or older career-changers, American and foreign nationals, part-time and full-time students, and employed and unemployed workers. All of the students were post-baccalaureate students-at-large or were enrolled in master's or doctoral degree programs.

The HRD course as delivered through VTDE had a two-fold purpose: (1) to provide an overview of theory, research, and practice relating to individual development, career development, and organizational development; (2) to acquaint students with the potential of an complexities involved in the VTDE classroom. It was expected that these present and future practitioners would learn, from this classroom experience, to employ VTDE confidently and intelligently in their own respective workplaces. In effect, the classroom became a laboratory in which students examined both the field of HRD and the operation of the VTDE classroom. The instructor, the site coordinators, and the students, through their practices, became role models for the class to emulate. This laboratory experience involved an immense amount of preparation on the instructor's part, including mastery of the VTDE system. According to Gehlauf, Shatz, and Frye (1991):

> Instructors do not want to be told how to teach; rather, they want to get a feel for the equipment and the specific technique they need to use to be more effective in interactive television classrooms. To facilitate this type of training, the technical system must be as "user friendly" as possible, so that the technology is transparent to the educational process. (p. 26)

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Among the strategies intended to maintain the transparency of the technology to the educational process were the services of two site coordinators. They were graduate students who had previously taken this HRD course. Their task was to prepare for classes by checking the quality of the VTDE system and connections, and to operate the system during classes with attention to sound and camera control. The instructor alternated between each site. While the instructor was at one site, the coordinator at the other site had the added responsibility of facilitating discussion groups, answering student's questions, and collecting or returning student papers and journals. Two models of site coordination were explored. In the Spring 1995 semester, a single site coordinator alternated with the instructor at two sites. In the Fall 1995 and Spring 1996 semesters, a student from each site acted as the site coordinator.

In the design of course content and process, it would have been easy to use a behavioral, structural approach to teaching and learning in a VTDE classroom. Instead the instructor based his approach firmly on a personal philosophy that embraced the principles of adult learning and development. One important principle of adult learning is the creation of a climate of trust to allay the anxieties of students confronting an unfamiliar delivery system and participating for the first time in an adult class. On the instructor's part, this climate of trust involves honoring each student's individuality--her or his special needs, interests, and rich life and work experiences. It is important that the course be designed so that students can share these experiences with each other. (For more discussion of the strategies selected for HRD classes, see Niemi and Owens (1996)).

Surveying the potential of technology to change the manner in which education can be delivered, Wedemeyer (1981) observed:

> What is different about learning via technology today is the scope of learning facilitated by technology, the altered roles of teacher and learners, the changed environment for learning necessitated by technology, and the sophistication of the processes used in developing instruction that will be communicated by technology. (p. 111)

The present research on distance education in general has shown evaluation by participants to be consistently among the best indicators of the effectiveness of the learning experience (Schlosser & Anderson, 1994; Sachs, 1993; Verduin & Clark, 1991). During the initial three semesters of VTDE delivery, the authors' goals for the evaluation process were threefold: (1) to supply formative data to the instructor and site-coordinators for the ongoing improvement of instruction; (2) to provide students with opportunities to participate in the evaluation process and reflect on their own learning experience as an integral assignment for the course; and (3) to supply summative data as the basis for planning future VTDE classes. It is in fulfillment of the third goal that the authors are sharing their research in this paper.

Data Collection

Quantitative data were obtained from the first three consecutive semesters of the HRD course delivered through VTDE. Qualitative data were also collected and analyzed to support conclusions suggested from the quantitative data, and vice versa. To meet the goals established for the evaluation process, it was necessary to collect a variety of data. The total data set includes:

- a written record of class activities, with special attention to problems directly related to VTDE delivery
- entries provided in bi-weekly student journals
- a summative evaluation instrument with narrative responses from the instructor and site coordinators

- a summative evaluation instrument with Likert Scale responses from students, identical to instruments distributed by academic departments to all other classes
- a summative evaluation instrument with both Likert Scale and narrative responses from students that queried the quality of their distance education experience.

The evaluation research data, because of their multi-source origin, provided a rich view of three successive HRD classes offered through VTDE. The narrative responses from the summative student instruments are available from the authors upon request.

Table 1
Academic Department Summative Evaluation
(Likert scale, 5 point ascending)

"How would you rate the overall effectiveness of this course?"

Spring semester 1995

Site	N	Mean	Standard deviation
DeKalb	14	4.36	0.81
DuPage	17	4.53	0.61

Fall semester 1995

Site	N	Mean	Standard deviation
DeKalb	12	4.25	0.60
DuPage	21	4.37	0.58

Spring semester 1996

Site	N	Mean	Standard deviation
DeKalb	15	3.86	0.75
Hoffman Estates	11	4.45	0.66

"How would you rate the overall effectiveness of the instructor?"

Spring semester 1995

Site	N	Mean	Standard deviation
DeKalb	14	4.50	0.73
DuPage	17	4.50	0.71

Fall semester 1995

Site	N	Mean	Standard deviation
DeKalb	12	4.58	0.49
DuPage	21	4.55	0.74

Spring semester 1996

Site	N	Mean	Standard deviation
DeKalb	15	3.93	0.92
Hoffman Estates	11	4.64	0.48

Discussion of the Academic Evaluations

Student evaluations of both the overall effectiveness of the course and the instructor were consistently high, except for the Spring, 1996 semester. The Hoffman Estates site gave the highest effectiveness scores during the three semester survey, but the DeKalb site gave the lowest effectiveness scores. The narrative responses at the DeKalb site, which was in a different distance education classroom from the Spring and Fall semesters of 1995, indicated problems with the learning environment. Seven of the fifteen students reported that the classroom temperature was much too warm. Another consistent complaint was the lack of sufficient tabletop microphones (an issue that was addressed prior to the next semester). The off-campus site, whether DuPage or Hoffman Estates, consistently scored the course effectiveness higher than did the DeKalb site, where the university is located. There may be two issues involved here, as suggested by student journals. First, the off-campus sites are located in suburban Chicago, and the students are mostly part-time students employed full-time in business and industry. Their impression is that VTDE allows them to attend a class that would be inaccessible to them unless they could commute. Second, for many students, this course was their only class during the semester and they were highly motivated to have a successful learning experience. The DeKalb students, on the other hand, reported that they perceived the VTDE delivery as an imposition to be endured. Many were full-time graduate students taking two or three other courses a semester. In their journals, the VTDE classroom is often compared to their other "traditional" classroom settings. A third issue peculiar to the DeKalb site was the addition of foreign students. Perhaps reticence about their English speaking was a factor in the overall lower evaluation the VTDE experience received from the DeKalb site, as contrasted with the DuPage or Hoffman Estates sites.

A closer analysis of selected classroom factors is available from the summative evaluation developed to assess the VTDE experience. The questions reviewed here were selected because they directly queried the distance education experience. The questions themselves appear in Table 2a. The descriptive statistics follow in the six sections of Table 2b.

Table 2 a
Distance Education Summative Evaluation

Survey Items
1. The on-site staff was helpful.
2. The teleconference effectively made up for the absence of the instructor.
3. I believe that there was more student interaction at my site when the instructor was present.
4. I believe that interaction between sites would be enhanced if each person submitted a brief, written, autobiographical sketch at the beginning of the course.
5. The instructor's teaching style, employed through this teleconference medium, facilitated my learning.
6. Compared to a regular class, I felt as comfortable learning, using distance education.
7. I reacted positively to seeing myself on camera.
8. The room provided a good environment in terms of physical needs (e.g. lighting, temperature, etc.).
9. I came to know classmates at the other site through dialogue, visual contact, or the joint colloquium.
10. Compared to a regular class, My class participation remained the same.
11. I found that the technical problems that occasionally occurred disrupted my overall experience in the class.

Table 2b
Distance Education Summative Evaluation
(Likert scale, 5 point ascending)

Spring semester 1995: DeKalb

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
Mean	3.636	3.000	3.273	2.818	3.364	3.364	1.818	2.545	2.727	2.455	1.727
Standard Error	0.203	0.191	0.195	0.296	0.152	0.195	0.296	0.366	0.359	0.312	0.273
Median	4	3	3	3	3	3	2	3	3	3	2
Mode	4	3	3	3	3	3	2	3	3	3	2
Standard Deviation	0.674	0.632	0.647	0.982	0.505	0.647	0.982	1.214	1.191	1.036	0.905
Sample Variance	0.455	0.400	0.418	0.964	0.255	0.418	0.964	1.473	1.418	1.073	0.818
Count	11	11	11	11	11	11	11	11	11	11	11
Confidence (95.0%)	0.453	0.425	0.434	0.659	0.339	0.434	0.659	0.815	0.800	0.696	0.608

Spring semester 1995: DuPage

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
Mean	3.533	2.533	3.333	2.667	3.067	2.867	2.867	2.400	2.667	3.000	2.667
Standard Error	0.133	0.165	0.187	0.187	0.153	0.133	0.165	0.214	0.287	0.098	0.126
Median	4	3	3	3	3	3	3	2	3	3	3
Mode	4	3	4	3	3	3	3	2	3	3	3
Standard Deviation	0.516	0.640	0.724	0.724	0.594	0.516	0.640	0.828	1.113	0.378	0.488
Sample Variance	0.267	0.410	0.524	0.524	0.352	0.267	0.410	0.686	1.238	0.143	0.238
Count	15	15	15	15	15	15	15	15	15	15	15
Confidence (95.0%)	0.286	0.354	0.401	0.401	0.329	0.286	0.354	0.459	0.616	0.209	0.270

Fall semester 1995: DeKalb

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
Mean	3.5	2.278	3.333	2.389	2.611	2.389	2.278	2.056	2.222	2.167	3.556
Standard Error	0.121	0.226	0.140	0.183	0.200	0.257	0.195	0.221	0.207	0.185	0.145
Median	3.5	2	3	2	2.5	3	2	2	2	2	4
Mode	4	2	3	2	2	3	2	2	2	2	4
Standard Deviation	0.514	0.958	0.594	0.778	0.850	1.092	0.826	0.938	0.878	0.786	0.616
Sample Variance	0.265	0.918	0.353	0.605	0.722	1.193	0.683	0.879	0.771	0.618	0.379
Count	18	18	18	18	18	18	18	18	18	18	18
Confidence (95.0%)	0.256	0.477	0.295	0.387	0.423	0.543	0.411	0.466	0.437	0.391	0.306

Fall semester 1995: DuPage

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
Mean	3.412	2.235	3.059	2.471	2.882	1.706	2.882	2.765	2.294	2.412	2.706
Standard Error	0.150	0.219	0.160	0.259	0.225	0.329	0.081	0.250	0.318	0.228	0.254
Median	3	2	3	3	3	2	3	3	3	2	3
Mode	4	3	3	3	3	3	3	3	3	3	3
Standard Deviation	0.618	0.903	0.659	1.068	0.928	1.359	0.332	1.033	1.312	0.939	1.047
Sample Variance	0.382	0.816	0.434	1.140	0.860	1.846	0.110	1.066	1.721	0.882	1.096
Count	17	17	17	17	17	17	17	17	17	17	17
Confidence (95.0%)	0.318	0.464	0.339	0.549	0.477	0.698	0.171	0.531	0.674	0.483	0.538

Spring semester 1996: DeKalb

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
Mean	3.231	1.385	3.308	2.154	2.231	1.923	2.538	1.846	2.231	2.462	2.615
Standard Error	0.122	0.241	0.414	0.317	0.378	0.309	0.243	0.317	0.281	0.215	0.350
Median	3	1	4	2	3	2	3	2	2	3	3
Mode	3	2	4	2	3	3	3	3	3	3	2
Standard Deviation	0.439	0.870	1.494	1.144	1.363	1.115	0.877	1.144	1.013	0.776	1.261
Sample Variance	0.192	0.756	2.231	1.308	1.859	1.244	0.769	1.308	1.026	0.603	1.590
Count	13	13	13	13	13	13	13	13	13	13	13
Confidence (95.0%)	0.265	0.526	0.903	0.691	0.824	0.674	0.530	0.691	0.612	0.469	0.762

Spring semester 1996: Hoffman Estates

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
Mean	3.5	2.222	2.889	2.500	3.056	2.167	2.833	2.333	2.722	2.500	2.278
Standard Error	0.121	0.250	0.279	0.232	0.221	0.218	0.202	0.229	0.158	0.218	0.211
Median	3.5	2	3	2	3	2	3	2.5	3	2.5	2
Mode	4	3	4	2	3	3	3	3	3	2	2
Standard Deviation	0.514	1.060	1.183	0.985	0.938	0.924	0.857	0.970	0.669	0.924	0.895
Sample Variance	0.265	1.124	1.399	0.971	0.879	0.853	0.735	0.941	0.448	0.853	0.801
Count	18	18	18	18	18	18	18	18	18	18	18
Confidence (95.0%)	0.256	0.527	0.588	0.490	0.466	0.459	0.426	0.482	0.333	0.459	0.445

Findings

Some responses were fairly consistent across each semester. The median score for Question 1, "The on-site staff was helpful," was 3 or higher, indicating general satisfaction. The question, "The teleconference effectively made up for the absence of the instructor," was problematic. As already inferred from the Academic Department Summative Evaluation (Table 1), the Spring, 1995 DeKalb site reported some of the highest scores, but the Spring, 1996 DeKalb site reported some of the lowest scores. For Question 2, the other sites responded with means in a close range between 2.222 to 2.533, slightly disagreeing. The Spring, 1995 DeKalb site had a mean of 3.00 and the Spring, 1996 DeKalb site had a mean of 1.385. These means were the high and low for all six sites.

All sites, except for Spring, 1996 Hoffman Estates site, agreed slightly that there was more student interaction at their sites when the instructor was present (Question 3), but the small differences in means from the midpoint do not indicate that the difference in interaction was a problem. All sites generally disagreed that an autobiographical sketch from each student, for distribution at both sites (Question 4), would enhance the interaction.

Responses to question 5, concerning the instructor's teaching style, were the clearest indicator of a halo effect. As noted for Question 2, the Spring, 1995 DeKalb site yielded the highest mean, and the Spring, 1996 DeKalb site yielded the lowest; however all the means were well below the means reported for instructor effectiveness (Table 1, Section 2). It would appear that the students clearly distinguished between the effectiveness of the instructor and the effectiveness of his teaching style as adapted to the teleconference medium. In evaluating the instructor, it is possible that the students assessed the additional difficulty of teaching through VTDE in the instructor's favor.

The Spring, 1995 DeKalb site reported a mean slightly higher than the midpoint for Question 6; all other sites reported below the mean, or disagreement that they felt as comfortable in a distance education learning environment as in a regular class. The Fall, 1995 DuPage site and the Spring, 1996

DeKalb site means show the strongest amount of disagreement. The latter is consistent with other responses, as has been noted, but the former (the Fall, 1995, DuPage site) response is more difficult to interpret because they are not consistent with their assessments of student interaction (Questions 3 and 4), reaction to the camera (Question 7) or environment (Question 8)--all questions that might indicate why they did not feel as comfortable learning through VTDE as in a regular classroom. All sites generally disagreed that they reacted positively to seeing themselves on camera. Likewise, none of the sites reacted positively toward the classroom environment (Question 8). The Spring, 1996 DeKalb site again had the lowest mean, but it is important to note, as before, that this class was held in a new distance education classroom, a different room from that used in Spring, 1995 and Fall, 1995 at the DeKalb site.

There was slight disagreement reported among the means from all sites to Question 10, "I came to know classmates at the other sites through dialogue, visual contact, or the joint colloquium." One factor influencing these responses may simply be the size of the total class per semester. The presence of thirty or more students is unusual in a graduate class, and the VTDE could only have magnified the difficulty in getting to know one's classmates for students used to seminars and other, more intimate class settings. Size may have also been a factor in Question 10. Again, there was slight, but general disagreement with the question, "Compared to a regular class, my class participation remained the same." These two questions together may show one of the difficulties involved in VTDE peculiar to graduate students, who expect a greater deal of interaction with, and access to the instructor and other students than do undergraduates.

Responses to question 11, concerning the disruptiveness of technical problems, also indicated disagreement which was encouraging. The Spring, 1995 DeKalb site posted the lowest mean. Responses to this question overall show that technical problems were not especially difficult for the students to overcome, but that adapting to VTDE delivery itself is the greater challenge.

Conclusions

All of the students at the two sites for the three semesters experienced VTDE for the first time. Although the instructor had prior experience with audio-conferencing, this was his first experience in delivering a course through VTDE. This study represents the teaching-learning transaction through the VTDE medium, and indicates the problem that must be overcome if this transaction is to be successful.

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Relationships Among Training, Performance, and Personal Characteristics of Graduates of Three Dietetic Training Programs

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Characteristics of academic and supervised practice performance, and self-efficacy perception of graduates of three dietetic training programs were described. A random sample was taken from entry-level dietitians, stratified by Dietetic Internship, Approved Pre-professional, or Coordinated Program. Subjects completed researcher-developed instruments, and SP directors completed performance forms. One-way ANOVA's and Duncan tests located group differences; Pearson rs established relationships; and ANCOVAs controlled for demographics. Relationships among groups, dietetic practice choice behaviors, and demographics were significant.

A long-held goal among dietetics leadership has been to establish greater understanding and linkages among academic and experiential training program outcomes and dietetics practice (Wellman & Bogle, 1990). Rapid changes in the future marketplace will affect growth and development of practice, and point to a current need to understand differences.

> Within our own field, we have the qualifications, the training, and the experience. ... We need the courage to perceive ourselves succeeding in new roles . . . to tap our vast creative potential, knowledge, and expertise to forge new goals and strategies. We must welcome new challenges and not be deterred by obstacles or problems. (Finn & Rinke, 1989, p. 1443)

This study addressed this goal, by describing relationships among training and performance outcomes, and self-efficacy perceptions which determine, in part, a person's strength of conviction that they can "forge new goals . . . new challenges and not be deterred by obstacles or problems" (Finn & Rinke, 1989, p. 1443). A major outcome of the data was to make recommendations to educational and experiential training program components, and entry-level dietetics practice. Furthermore, tests of variables developed for this study, can be recommended for use as formative measures during dietetic training programs, or career choice advising.

Graduates of dietetic training programs represent the pool of entry-level registered dietitians (RDs). The researcher hypothesized that differences in academic performance, supervised practice (SP) performance, self-efficacy perceptions in dietetic practice, and demographics; would exist among graduates and be explained by differences among three dietetic training programs. The dietetic training programs were (a) Dietetic Internships (DI), a didactic program, followed by a post-baccalaureate internship; (b) Approved Pre-professional Practice Program (AP4), a didactic program, followed by a post-baccalaureate approved pre-professional practice program; and (c) Coordinated Program (CP), which incorporated the baccalaureate degree, and a coordinated SP, into the same program.

The researchable problem statement was: Do dietetic training programs promote the growth and development of students equally, and in ways that contribute to graduates who are ready, able, and willing to pursue entry-level work in the field of dietetics? Three research questions within the problem statement were:

1. Do graduates of three dietetic training programs differ in study variables?
2. To what extent, and in what direction, are study variables related in the sample, and among graduates, of three dietetic training programs?
3. To what extent do demographic data explain relationships that exist in study variables?

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Literature Review

Differences in dietetic training programs is considerable. Variation in student and graduate ages, organization and timing of academic and SP components, and comprehensiveness of SP, suggest that variation should exist among graduates of DI, AP4, and CP. Graduates of dietetic training programs have been studied and found to vary in knowledge, skill, and attitude measures.

Several studies described differences in GPA, and paid and volunteer work experience (Bradley & Connor, 1993; Carruth & Sneed, 1990; Dietetics Education Task Force (DETF), 1993; English, 1995). For example, DI and AP4 students who advanced to SP, had significantly higher GPAs, than those who did not (DETF, 1993; English, 1995). Carruth & Sneed (1990) also identified letters of reference "that provided insight about the student . . . , e.g., flexibility and dependability" as important to elucidate differences among graduates applying to SP programs (p. 999). Measures have been correlated among training program graduates. Academic performance, measured as pre-major GPA, was correlated with major GPA in CPs (Hanson & Fruin, 1984; Pope & Gines, 1986). Two academic measures--sophomore GPAs and SAT math scores--predicted 88% of the variance in graduate GPA (English, 1995).

Bandura's Theory of Self-Efficacy was identified as the theoretical framework for the self-efficacy variable. In dialog with Evans (1989), Bandura addressed the relationship between efficacy beliefs and performance capability:

> Effective functioning requires that people develop competencies and skills. In addition, they need a strong self-belief in their own efficacy to put those skills to good use. ... Skills are a generative rather than a fixed capability and perceived efficacy plays a critical role in whether they are used well, poorly, or extraordinarily. ... A high sense of efficacy leads people to mobilize a high level of effort in which they undertake and persevere in the face of obstacles and difficulties. (pp. 53-54)

Bandura (1977a, 1977b) described self-efficacy perceptions as derived from four constructs: (a) judgment of capability to take action, even when faced with problems to overcome (choice behavior), (b) perception that one possesses certain knowledge and skill (efficacy expectation), (c) anticipated result or level of success (outcome expectation), and (d) different environmental events (sources of information). According to Bandura, self-efficacy is not a global trait, but an individual's belief in his or her ability to perform successfully in a given situation (Eckerson, 1995; Starko & Schack, 1989). "As such, self-efficacy should be studied as it relates to a particular behavior and context" (Eckerson, 1995, p. 3).

Substantial literature has shown correlations between self-efficacy and training programs, career choice, and/or educator/counselor practices (Bandura & Wood, 1989; Betz & Hackett, 1986; Eckerson, 1996; Gist, Schwoerer, & Ropsen, 1989; Gist, Stevens, & Bavetta, 1991; Guyton, Fox, & Sisk, 1991; Housego, 1992; Luzzo, 1996; Ozer & Bandura, 1990; Ramey-Gassert, 1992; Solberg, et al, 1994). Bandura and Wood (1989) had a most persuasive finding. When managers held outcome expectations that organizational events were controllable, they "maintained a strong sense of self-efficacy, set increasingly challenging goals, and exhibited effective analytic thinking" (p. 805).

Self-efficacy beliefs have been found to strengthen through variation of information sources (Bandura, 1986; Eckerson, 1995; Saks, 1995) as they "exert their effects on performance through cognitive, affective, or motivational processes" (Bandura, 1989, p. 733). Dietetics students in SP training components ranked activities with individual responsibility, as having the greatest degree of learning (Wolf & Dunlevy, 1996). An enlightening finding was that feelings of not being wanted or appreciated by the preceptor, wereamong the greatest sources of frustration. In Bandura's theory, the instructor, and practitioner-model are important source of information that participate in forming self-efficacy judgements.

Methodology

A comparative research design was used, in which four dependent variables were measured for three dietetic training programs: (a) undergraduate didactic plus an internship (DI), (b) undergraduate didactic plus an approved pre-professional program (AP4), and (c) a coordinated program (CP). Table 1 displays the dependent variables, measures, and values.

Table 1 Dependent Variables, Measures, and Values

Dependent Variables	Measures	Values
Academic Performance	GPA:	
	Overall	max 4.0
	Major	max 4.0
	Sciences	max 4.0
	RD Exam	a. total score b. number correct in five domains
SP Performance	20 Criteria	a. total of 20 criteria rated 1 to 5 each
Self-Efficacy Constructs	Choice Behavior	
	Efficacy Expectation	
	Outcome Expectation	a. construct (0-100) by area and scenario
Dietetic Practice	Three Areas:	
	Clinical	
	Management	
	Community	a. total (0-100) by area
	Nine Scenarios:	b. total (0-100) by scenario (1-9)
	Roles:	
	provide care	
	manage resources	
	provide programs	c. total (0-100) by role
	Settings:	
	acute-care	
	long-term care	
	residential treatment	
	outpatient/ambulatory	
	commercial/noninstitutional	
	community	
	public	d. total (0-100) by setting
Demographics	Age	years/months
	Work Experience:	
	total, paid	years/months
	dietetics-related, paid	years/months
	volunteer	years/months
	Professional Activity:	
	memberships	number
	meetings/continuing ed.	number

Variables. The independent variable, dietetic training program, measured Bandura's sources of information construct. The dependent variables were measured by three data sources and tools: (a) a researcher-developed Dietetic Practice Readiness Instrument completed by study subjects that included self-efficacy perceptions in dietetic practice, GPA, and demographics; (b) an American Dietetic Association (ADA) developed Performance Appraisal Form completed by SP directors for performance data; and (c) computerized ADA national registration examination data, a measure of academic performance.

Multiple measures of the dependent variable categories existed, as follows:

1. Academic performance had two: GPA, as (a) overall, (b) major, and (c) sciences; and RD exam scores, as (a) total, and (b) five subcategories.

2. SP performance had a total, cumulative score of 20 different criteria, rated using a subjective Likert scale.

3. Self-efficacy perception had three: efficacy expectation, outcome expectation, and choice behavior; and dietetic practice had two: area, as (a) clinical, (b) management, and (c) community; and scenario, as nine descriptive statements with a different role or setting as (a) provide nutritional care to individuals, (b) manage food and human resources, and (c) provide nutrition programs for groups; and settings, as (a) outpatient/ambulatory, (b) acute-care hospital, (c) long-term care facility, (d) residential treatment facility, (e) commercial/ noninstitutional, (f) community site, and (g) in the general public.

4. The demographics were three: age in years/months; years/months of work experience during the training program, as (a) total, (b) dietetics-related, paid; and (c) volunteer; and, extracurricular professional activities during the training program, as (a) number of professional memberships, and (b) professional meeting or continuing education program attendances.

Researcher-Developed Instrument. The Dietetic Practice Readiness Instrument tested Bandura's three other constructs in contextually specific practice scenarios. Twelve descriptive statements comprehensively portrayed dietetic practice, three in traditional, entry-level positions of clinical, foodservice management, and community; and nine with a variation in role: providing nutritional care, managing food and human resources, and providing nutrition programs to groups; or setting: acute, long-term, community, ambulatory/outpatient, commercial/non-institutional; and individuals or groups in communities, and groups in the general public (Kane, et al, 1990). For example, Scenario #1 read: In this position, you will work in an acute-care hospital to provide nutritional care to individuals, including identifying nutrition-related needs and teaching/counseling patients/families.

To test three self-efficacy constructs, three questions asked subjects to rank judgments for each descriptive statement. These questions, and corresponding construct, were: (a) "How likely are you to choose this position?" for choice behavior; (b) "How would you judge your current ability *to perform* in this position?" for efficacy expectation, and (c) "How likely are people *to improve* with you in this position?" for outcome expectation. An 11-point Likert scale--from zero to 100, in 10 point increments--quantified the strength of response for each question by descriptive statement. For example, for choice behavior, this terminology was used for the scale:

0	10	20	30	40	50	60	70	80	90	100
	Very Unlikely		Somewhat Unlikely			Somewhat Likely			Very Likely	

Results

The purpose of Research Question One was to describe differences in dependent variables that existed among graduate groups. Significant findings existed in self-efficacy in dietetic practice areas, and scenarios, and in demographics.

First, significant between group difference existed in the self-efficacy construct, choice behavior, for two dietetic practice areas: clinical (F=5.950, p=.0030), and management (F=2.658, p=.072). This indicated those graduates of CP (M=7.984) and DI (M=7.678), were significantly more likely, than graduates of AP4 (M=6.429), to choose a clinical dietitian position; and graduates of CP (M=8.318) were significantly more likely, than graduates of AP4 (M=7.743), to choose a foodservice management dietitian position.

Second, significant between group difference existed in one self-efficacy construct, measured by five scenarios; and two self-efficacy constructs, measured by on scenario. In four of these, the significant between group differences were in the self-efficacy construct, Choice Behavior. Both graduates of DI and CP reported that they were significantly more likely, than graduates of AP4, to provide nutritional care to individuals, in both, acute-care hospital and long-term care settings.

Graduates of CP (M=5.238) also reported that they were significantly more likely, than AP4s (M=4.188), to work in a long-term setting in a position to manage food and human resources. Neither, however, rated the choice above a Somewhat Unlikely level. CPs (M=7.206) also reported a significantly greater likelihood, than AP4s (M=6.203), that they would choose to provide nutritional care to individuals in a community setting.

In the fifth scenario, the single self-efficacy construct, of significance, was Outcome Expectation. Graduates of AP4 (M=7.2143) reported a significantly greater likelihood, than either DIs (M=6.528) or CPs (M=6.460), that operations would improve with them in the position, to manage food and human resources, in an acute-care hospital. In one scenario, significant difference between groups existed for two constructs, Efficacy Expectation (F=2.844, p=.0603), and Outcome Expectation (F=2.804, p=.063). Graduates of AP4s (M=8.529) reported a significantly higher judgment, than CPs (M=7.937), that they could perform in a position, to provide nutrition programs for groups in the general public. Additionally, AP4 graduates (M=8.443) reported a significantly greater likelihood, than either DIs (M=7.956) or CPs (M=7.937), that people would improve with them in the position, to provide nutrition programs for groups in the general public.

Third, there was significant between group difference in the demographic variable, age (F=6.019, p=.003). Both graduates, of AP4 (M=32.035) and CP (M=30.652), were significantly older than graduates of DI (M=27.953).

Research Question Two was formulated to examine the strength of relationships between pairs of dependent variables (bivariate) in the sample, and when significant, in dietetic training program groups. The purpose of calculating additional correlations by group was first, to locate significant relationships within one or more dietetic training program group, and second, to identify the strength of significant relationships by group.

A significant positive relationship, of moderate strength, existed between Management Choice Behavior and Clinical Choice Behavior, for DIs (r=.471, p=< .01) and AP4s (r=.490, p=≤ .01). A significant relationship existed between Clinical Choice Behavior and Community Choice Behavior for DIs (r=.350, p≤ .01), and AP4s (r=.362, p≤ .01). Neither of these relationships were significant for CPs. A significant relationship existed between Management Choice Behavior and Community Choice Behavior for DIs (r=.474, p=≤ .01), AP4s (r=.602, p=< .01), and CPs (r=.616, p=< .01).

Discussion

Graduates, of AP4s, were the only group, to report significantly higher self-efficacy perceptions in dietetic practice. AP4s perceived themselves to be significantly more efficacious, than DIs or CPs, in management and community dietitian roles. They also reported a significantly stronger belief, than DIs or CPs, that the public would improve with them in the community role. AP4s were also as likely to pursue positions as a community, clinical, *or* management dietitian, and were significantly less likely to choose a clinical position, than DIs or CPs. Because of the abundance of clinical dietitians, and the need for efficacious practitioners in expanding management and community roles, AP4 graduates in this study had valuable practitioner characteristics.

It appears from these results, that AP4s are more likely to pursue positions to provide nutrition programs to the general public. In addition, they alone, are more likely to perceive themselves as able to perform the position, and likely to help people improve as a result of their performance. These graduates were significantly older than DIs, by 5 years, and on average, were 1.4 years older than CPs. To the extent that age translates into maturity, and with results of increased efficaciousness and perceived potential for improved outcomes, graduates of AP4 possess characteristics desired in practice.

AP4 training programs are typically shorter in length, focus in one area (management, clinical, or community); and can be completed on a part-time basis. These program elements represent expediency in training, that enables older individuals to make a shorter overall time commitment. The result in this study, was more efficacious individuals who perceive themselves able to work and succeed in areas that promote growth and development of dietetics practice.

Conclusions

This research contributed new knowledge about personal characteristics, including self-efficacy perceptions, among graduates of different training programs in one field of practice. Additionally, it pointed to important relationships among training and performance outcomes and practice perceptions. Examining entry-level dietitian differences contributes to understanding what they choose to do, how much effort they intend to invest, how long they will "persevere in the face of disappointing results, and whether tasks are approached anxiously or self-assuredly" (Bandura, 1986, p. 21).

Academic and supervised practice performance are only two measures that relate to future practice potential. While commonly used, they may be insufficient as measures of practice potential in today's world of work. According to Bandura (1982), people with a stronger sense of self-efficacy will decide to approach a complex situation due to their expectation of success. Conversely, people with a weaker sense of self-efficacy will decide to avoid participation in a complex situation due to their expectation of failure. A changing dietetics practice field represents an increasingly complex situation in which more efficacious practitioners would be desired. Differences that result in self-efficacy perceptions, by dietetic training program, are also important in relationship to practice potential.

Entry-level practice in HRD is also increasingly complex, and occurs in a rapidly changing workplace. These environments need practitioners who can increasingly cope with novel and changing situations. Description of characteristics of entry-level registered dietitians can inform HRD training and practice in some areas, and encourage application of these research methodologies to HRD. These results can inform other entry-level practitioners, such as those in HRD, who have difference in training programs and an increasingly challenging marketplace.

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HRD Evaluation as the Catalyst for Organizational Learning

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As the HRD field continues to focus on performance and learning, supported by the belief that HRD should strategically support the organization's mission and goals, then HRD evaluation must evolve as well. Evaluation must be viewed as a means for achieving sustained organizational growth. This paper argues that HRD evaluation must broaden its conception of evaluation from being a periodic event focused on a narrow set of variables to an ongoing process of evaluative inquiry.

There is little doubt that today's organizations are experiencing unprecedented changes in how they define themselves and accomplish their work. No where are these changes more evident than in organizations' training and development departments. HRD professionals are now being called on to: 1) move from training to performance improvement, 2) keep up with the pace of reengineering, 3) manage and train current and new employees, 4) maximize training technologies, 5) facilitate learning to achieve the organization's goals, and 6) know their organization's business inside and out. (Bassi, Benson and Cheney, 1996) All of this is occurring in the midst of downsizing, outsourcing, budget cutting, and frequent turnover in the leadership of many organizations.

HRD professionals are also increasingly being asked to show how their efforts add value to the organization. In many companies, evaluation of training is thought to be the most appropriate method of demonstrating this value. Several surveys of organization's involvement in training program evaluation have recently been conducted. For example, Training Magazine's October, 1996 Industry Report (p. 63), found that U.S. organizations are heavily involved in evaluating their training programs. Using Kirkpatrick's (1959 a, b, 1960 a, b) four level model, 86% of all organizations measure participants' reactions to 83% of their courses, 71% test participants' learning in 51% of their courses, 65% evaluate changes in behavior back on the job for 50% of their courses, and 49% measure business results for 44% of their courses. However, findings from the American Society for Training and Development's (ASTD) Benchmarking study found that 94% of the respondents collected participant reaction information, 34% measured learning, 13% evaluated transfer of learning and only 3% were evaluating financial impacts from training. (Bassi, et al., 1996, p. 37) While these figures differ significantly, they do point to evidence of a growing interest in training program evaluation. Given that estimates of training provided in the public and private sectors is now equaling $55.3 billion (Benson, 1996, p. 58), HRD professionals have an ethical obligation, if not a pragmatic one, to invest in developing effective evaluation systems for the organization's learning efforts.

In this paper I argue that HRD practitioners should become facilitators of individual, team and organizational learning through Evaluative Inquiry. This argument is based on a review of the training program evaluation research and the organizational learning literatures. Findings from a survey of U.S. and Canadian evaluators are also presented to further support this role for HRD professionals. The final section of this paper proposes a model of evaluation labeled "Evaluative Inquiry for Learning in Organizations" that broadens evaluation activity from an event-focused practice to an ongoing, collaborative learning, continuous change process.

Research Questions

The following questions guided this research study:

1. What is the status of HRD evaluation research?
2. What is the role and purpose of HRD evaluation in changing organizations?

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3. What is the relationship between HRD evaluation and organizational learning?
4. How can HRD evaluation facilitate increased performance and learning in organizations?

Research Design, Methods and Data Analysis

To answer the above research questions, a literature review and mail survey were conducted.

Literature Review A review of the HRD evaluation literature from 1959 to the present was conducted to understand the history of training evaluation model development and subsequent evaluation research studies (Hilbert, Preskill and Russ-Eft, forthcoming). The review involved searching several databases including Education Research Information Center (ERIC), the Internet, ASTD Index of Literature, Business Periodical Index, and PsychInfo. Conference proceedings from the Academy of Human Resource Development and various published books were also reviewed. Since we were interested in locating and reviewing scholarly work, principally in the form of literature reviews, qualitative case studies and empirical research, we did not include articles from practitioner oriented publications such as Training or Training & Development Magazines. While these periodicals offer many ideas and advice to HRD professionals, they do not necessarily represent the findings of research studies. We identified approximately 90 evaluation research oriented articles published since 1959.

Mail Survey In an effort to understand practicing evaluators' current and developing conceptions of evaluation use, a survey of 521 U.S. and Canadian evaluators who are members of the American Evaluation Association's (AEA) Evaluation Use Topical Interest Group was conducted in May, 1996 (Preskill & Caracelli, 1996).[1] A thirteen page survey was developed over a three month period by a group of eleven AEA members. After three pilot tests and six iterations, the survey was mailed with a postage-paid return envelope. The survey covered issues regarding evaluation's purpose and role in organizations, the use and misuse of evaluation findings, approaches to evaluation, and strategies to facilitate the use of evaluation findings. After one follow-up mailing, a response rate of 49% (n=257) was obtained.

The Likert scale survey data were entered into the Pulsesurvey® data analysis program developed by Scantron. Descriptive statistics were computed for each item. The data were then transferred into a SAS program and were further analyzed by computing cross-tabs and chi square analyses for independence on the actual distribution from the expected distribution for several items.

Findings

HRD Evaluation Research Literature For the last forty years, Kirkpatrick's four level evaluation model (1959 a, b, 1960 a, b) has been the focus of conceptualizing and practicing HRD program evaluation. Briefly stated, Kirkpatrick suggested that to simplify training evaluation, trainers should evaluate their programs according to four levels: 1) participants' reactions, 2) participants' learning, 3) participants' behavioral changes, and 4) business results. Kirkpatrick's four level model has been the most often used and referenced approach to training program evaluation. The review of the research literature found 57 journal articles describing or mentioning evaluation models published between 1959 and 1996. Of those, 44 (77%) included Kirkpatrick's model (either alone or in comparison with another model). Only thirteen articles discussed a model other than Kirkpatrick's. Of the 57 articles, 21 different models were published during this time period. Most of these models attempt to measure some aspect of participants' reactions, motivation, learning, knowledge and skill transfer, financial results and general organizational impact. Most however, are not true models that suggest hypotheses, relationships between variables or are testable in ways that would produce generalizable results. Instead they tend to be taxonomies or classification schemes that offer trainers a framework for evaluating training programs. One exception may be the HRD Evaluation Research and Measurement Model proposed by Holton (1996). While his model, too, resembles those proposed by Kirkpatrick (1959 a, b, 1960, a, b), Brinkerhoff (1989), and Hamblin (1974), he goes further by explicitly linking learning, individual performance and organizational results to primary and secondary influences. By acknowledging the potential impact of various organizational variables, Holton's evaluation model offers researchers a more comprehensive model to explore the effects of training.

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[1] The American Evaluation Association is the professional organization for evaluators who claim evaluation to be their primary, secondary or tertiary professional identity. Formed in 1985 from the Evaluation Network and Evaluation Research Society, it currently has approximately 2100 members from around the world. It hosts an annual conference which typically draws 800-1000 participants.

While Kirkpatrick originally did not state that the model was hierarchical, it has been widely accepted that if participants liked the training, they will have learned. If they have learned, they are more likely to transfer their learning to the job, and by inference, the organization will have accrued some benefits. Yet the majority of research that has been conducted on HRD evaluation has focused on looking for evidence of this hierarchy. Though some studies have tentatively established relationships between two of the levels, such as the correlation between participants' reactions and their learning (Clement, 1982; Baldwin, Magjuka and Loher, 1991), other research does not support the hierarchical model (Dixon, 1990; Noe & Schmitt, 1986; Warr & Bunce, 1995).

The review of the literature also revealed that the vast majority of these models are not grounded in a philosophy or theory of evaluation (Kraiger, Ford and Salas, 1993). They tend to position evaluation as a periodic event that is the sum of a set of technical skills and activities focused on a narrow set of variables using a limited number of designs and methods. Of particular concern is how little HRD professionals and scholars have tapped other disciplines such as public education and the government or military in their development of evaluation theories, models and approaches. Over the last thirty years, an enormous amount of research has been conducted in the evaluation field manifested by half a dozen evaluation journals (e.g., Evaluation, Evaluation & Program Planning, Evaluation Review). [2] Research on evaluation models, methods, philosophies, ideologies, standards, ethics, utilization, cultural issues and validity have continued to develop outside of the HRD field.

Organizational Learning Literature Several writers predict that the survival of organizations will be based on their ability to learn from their current practices and past experiences. Over the last few years we have witnessed a burgeoning literature on organizational learning and the learning organization. Though the work on organizational learning was first introduced in the management theory literature by Argyris & Schon (1978, 1996) nearly two decades ago, the concept was made popular and accessible by Peter Senge's book, The Fifth Discipline in 1990. While several definitions have been offered, one particular definition captures the interpretive and pragmatic perspective which I believe is most relevant to today's organizations:

> Organizations learn through joint discussion and interpretation of events, and through gradual changes in the assumptions, symbols, and values of participants. In this approach, trials and errors, or actions and outcomes, are important means of learning. (Daft & Huber, 1987, p. 10)

Employees in a learning organization may:

- tend to ask more questions than give solutions/answers
- develop a greater sense of personal accountability and responsibility for the organization's outcomes
- take greater risks
- be more consultative/coaching
- develop creative solutions

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[2] For a detailed history of the evolution of program evaluation, see House (1993).

- be more self-directed learners

As a result, learning organizations:

- develop new products and services better and faster
- have higher morale, improved organizational work climate
- experience improved financial performance
- are able to change more quickly
- increase productivity

The need for shared information and collaboration among organization members is a significant theme throughout the organizational learning literature (Dixon, 1992). As Wheatley (1992) suggests, we need a broad distribution of information, viewpoints, and interpretations if we are to make sense of the world" (p. 64). The importance of information gathering in learning organizations has been discussed by several authors. They suggest that learning organizations:

- are hungry for information and strive to communicate that knowledge with organization members who may benefit from it (Wick & Leon, 1993);
- continually measure how well they are doing and hold organization members accountable for its progress (Brooks & Supina, 1992);
- involve the acquisition of new information and the ability to analyze that information creatively, learn from it, and apply that learning in useful ways (Thompson, 1995, p. 95).

These characteristics can be viewed as supporting a "continuous process of organizational growth and improvement that: a) is integrated with work activities, b) invokes the alignment of values, attitudes, and perceptions among organizational members, and c) uses information or feedback about both processes and outcomes to make changes" (Torres, Preskill & Piontek, 1996, p. 2).

A few HRD scholars are advocating a stronger role for HRD professionals in creating and sustaining learning organizations (Dixon, 1992; Preskill, 1994; Watkins and Marsick, 1992) and high performance work systems (Bassi, et al., 1996; Gephart and Van Buren, 1996). Watkins and Marsick (1992, p. 127) recommend that human resource development professionals embed continuous learning strategies within the organization, teach people how to learn from their experiences, think systemically, conceptualize and plan individual development for multiple organizational futures, monitor and upgrade the overall knowledge/skill set of the whole organization, help people enact more participative, democratic workplaces, and craft politics which make learning continuous, self-regulated, and autonomously funded.

Mail Survey Though the survey was not specifically aimed at HRD professionals, 20% of the respondents identified themselves as working in the private sector. Another 31% are faculty of colleges or universities in various disciplines who typically provide evaluation consulting services to a variety of organizations. It is not the intent here to report all of the findings from this particular study (a more comprehensive summary of the results is in press (Preskill and Caracelli). However, there are specific findings that have significant implications for HRD professionals who wish to broaden the definition and practice of evaluation in changing organizations. They are divided into three categories: 1) the purpose of evaluation, 2) an evaluator's role, and 3) approaches to evaluation.

Purpose of Evaluation Nearly all of the survey respondents strongly agree or agree that the purpose of evaluation is to provide information for decision-making (99%) and to improve programs (99%). Over three-fourths of them also agree that evaluation can be used to facilitate organizational learning (87%) and investigate the merit or worth of an evaluand (80%). Fewer, however believe that evaluation's purpose is to generate new knowledge about evaluation (63%) or to promote social justice (43%).

When asked to indicate the extent to which evaluation contributes to an organization's ability to grow and change, we were presented with an interesting paradox. Respondents rate evaluation as contributing a very great or great extent, to an organization's ability to learn from its experiences (70%), and as being a powerful planned change strategy (59%). Yet fewer respondents think that evaluation results in fundamental changes in how organizations achieve their goals (25%). If organizations do learn from evaluation experiences and evaluation helps facilitate change, how is it that evaluation does not help organizations achieve their goals? Perhaps this indicates a conservatism of evaluators' beliefs about what force evaluation is playing in today's political, dynamic, chaotic, and rapidly-changing organizations. It is possible they wish for evaluation to be more effective, but find little evidence as of yet to support these outcomes.

Evaluator's Role The survey respondents strongly agree or agree that evaluators should take responsibility for involving stakeholders in the evaluation process (96%), and should facilitate organizational learning (81%). Furthermore, they strongly agree or agree that evaluators should be accountable to intended users of the evaluation for intended uses of the evaluation (71%), should formulate recommendations from evaluation studies (88%), should become involved in evaluation follow-up activities (74%), and should attend to the social consequences of the evaluation (59%).

Approaches to Evaluation Respondents were asked to compare the importance of various evaluation approaches ten years ago with today. Their responses indicate that while still important, summative and objectives-based evaluation approaches are significantly less important today than they were ten years ago. Conversely, formative evaluation, evaluation with an organizational learning emphasis, evaluation based on performance results, participatory and practitioner-centered action research or empowerment forms of evaluation are significantly more important today than they were ten years ago (all chi square analyses are significant at $p<.05$).

These survey results reflect a profound shift in the evaluation community's perspective on evaluation practice. Over the last two decades the concept of what constitutes legitimate and professional evaluation practice has been evolving. Initially we saw the strict application of a social science positivist, experimental design, product-oriented approach with an emphasis on objective value-free, replicable and generalizable, instrumental use of findings. Now, more holistic, naturalistic, qualitative, process-oriented approaches with an emphasis on stakeholder participation and learning are becoming increasingly important. Evaluation approaches such as participatory, empowerment, collaborative and developmental evaluation, positions the evaluator as a facilitator of learning whereby stakeholders and program participants learn about themselves, each other and the program, through their involvement in the evaluation process (Brunner & Guzman, 1989; Cousins & Earl, 1992, Greene, 1988; Patton, 1994, 1996; Shapiro, 1988). Each of these approaches seeks to emphasize learning as an outcome of the evaluation process in addition to the more summative, product-oriented outcomes normally expected of an evaluation study. In this context the evaluator seeks to teach clients and stakeholders evaluation skills and processes so that they may continue to engage in evaluation practice when the "evaluator" has left the scene.

Evaluative Inquiry for Learning In Organizations What we have learned from the HRD evaluation research literature review is that evaluation as it is currently conceptualized, practiced and researched, is not sufficient for answering many of the questions trainers and others have about the effectiveness of an organization's training and development efforts. While the evaluation models have provided some guidelines for training program evaluation, they have proven to be inadequate for promoting ongoing learning in organizations. At the same time, the survey results suggest that evaluators find ways to involve key decision-makers (stakeholders) in the evaluation process, link evaluation to organizational systems and processes, and focus on the usefulness of evaluation data (intended uses for intended users).

In addition to collecting data on a program's effectiveness via the traditionally used methods and models, and in keeping with the need for HRD practitioners to support individual, team and organizational learning efforts, I propose that HRD professionals consider implementing a model of evaluation that focuses on continuous inquiry in their organizations (Preskill and Torres, 1996). The underlying premise of the Evaluative Inquiry model and processes is based on the following:

- inquiry informs learning for and about performance
- inquiry is the process and energy of learning
- inquiry facilitates collection and analysis of data that supports learning
- inquiry has a technology that must be learned
- inquiry should be embedded in organizational culture, structures and processes

Evaluative inquiry requires that organization members critically consider what they think, say and do in the context of the work environment. The following process are the core of Evaluative Inquiry:

- asking questions
- identifying and challenging values beliefs and assumptions
- individual and team reflection
- dialogue
- collecting, analyzing and interpreting data
- action planning
- implementation

For evaluative inquiry to occur, each of these processes must be employed at all times. The processes are interdependent and relational; the success of one of the processes is dependent on the others though they need not follow a linear pattern of practice. As a set of interrelated processes, evaluative inquiry is also a learning system which sustains and institutionalizes learning in organizations. It implies both thought and action, as well as cognitive, behavioral, and affective processes that influence the way we make decisions, solve problems, adapt to change, and meet organizational challenges.

The role of the HRD professional would be to identify the learning and performance issues that need to be addressed (e.g., a request to design a training intervention, why trainees are seemingly not using what they've learned from training back on the job, to plan for future learning experiences that will support the organization's mission). Considering the particular orientation or view of HRD within the organization as described by Russ-Eft (1996) would be one way to identify such issues. Russ-Eft suggests that HRD functions in organizations assume a view of training that influences the objectives and goals of HRD in that organization. Organizations are either predominantly development focused, issue-linked or strategic in their approaches to training. Depending on which view an organization holds for HRD, Evaluative Inquiry processes could be used address key evaluation questions within this framework. HRD professionals would then design these processes, engage organizational members in them, model them, and continually facilitate organization members' capacity to carry out these processes. Evaluation becomes part of the everyday business of HRD professionals instead of a one-shot data collection activity that may or not result in useful findings. The outcome is an organization that uses inquiry processes to share information in ways that foster individual, team and organizational development and growth.

Implications for Practice

For the last four decades HRD evaluation has focused on a narrow set of questions using a limited number of tools and methods. This pattern has led to a constricted view of what HRD evaluation can offer organizations. Just as training departments in organizations have been silos, isolated, set apart from other organizational systems, so has HRD evaluation. Evaluation of training programs has been parochial in its approach and as a result has failed to show HRD's contributions to organizations. As the role of the trainer expands into that of a learning and performance consultant, as organizations seek to do things faster and better, HRD professionals should consider additional and alternative ways of integrating evaluative inquiry into their work. This shift requires establishing a culture of information in the organization, "where information collection, development and utilization becomes a matter-of-fact, ongoing activity for all those working in the organization" (Bhola, 1995, p. 81). It should also look to other disciplines to expand its notion of evaluation theory and practice. As Scriven (1996) eloquently states,

> Evaluation is not only a discipline on which all others depend, it is one on which all deliberate activity depends. It follows that significant improvements in the core concept and techniques of evaluation, of which we have seen many in recent years, and of which many more could be made within the next few years, have the potential for huge improvement in the quality of life and work, as well as in the level of achievement in all disciplines. (p. 404)

Who in the organization knows more about how adults learn, group dynamics, instructional design and development? HRD professionals are uniquely positioned to make evaluation the catalyst for organizational learning.

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A Qualitative and Quantitative Approach to Evaluating Leadership Training

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Zenger Miller

An evaluation of a modular leadership program was undertaken as part of a beta testing process. The major objectives were to determine the impact of the training in terms of learning, skill transfer, and impact on the organization, and to validate the surveys used. A blended qualitative and quantitative approach was also tested. Results indicated that improvements occurred from pre to post training. The blended approach to data analysis was successful in yielding useful information.

The current business climate, which emphasizes the need to account for every dollar spent on training, among other things, has sparked a renewed interest in evaluating and measuring the outcome of HRD programs (Kirkpatrick, 1995; Russ-Eft, Krishnamurthi, & Ravishankar, 1994; Phillips, 1994; May, Moore, & Zammit, 1987).

The demand for evaluation and measurement of HRD interventions has become so widespread and urgent that organizations offering such services have begun to realize that in order to satisfy their customers and meet their needs, it is virtually mandatory to provide means of measuring programs and services to their customers. Such measures, moreover, need to be relatively inexpensive and easy to implement because of personnel and time constraints faced by organizations across the board (Hequet, 1996).

Training programs that cannot easily be evaluated, or more specifically, those organizations that do not offer measurement of training outcomes as part of the HRD interventions themselves, cannot compete effectively with others that do offer measures of effectiveness as a service to their customers. In some instances, organizations choose training programs based upon the measurement services offered, rather than the quality and appropriateness of the training itself. This often results in the training being considered ineffective and discontinued, and thus, the baby thrown out with the bath water. Even worse, employees are deprived of the training or other interventions they really need for them to succeed in the workplace.

In addition, with this focus on evaluating the effectiveness of HRD programs, organizations often neglect other aspects of success in terms of training programs within organizations (Holton, 1996). For example, organizational barriers to practicing newly acquired skills is an aspect of training success that is frequently neglected (Swanson, 1994; Rouiller & Goldstein, 1993). Another critical and often forgotten aspect of training success is the need for the training (Holton, 1995; Sleezer, 1991; McGehee & Thayer, 1961); if trainees do not need the skills being offered, either because they already have a high level of skill or if the skills acquired are not needed on the job, it is likely that an evaluation of behavior change on the job will not yield positive results.

A modular leadership development program designed to be applicable to leaders at all levels in the workplace was released in 1996 by Zenger Miller, a consulting and training company. As an integral part of the final beta testing process for this program, an evaluation of this program was undertaken at six organizations from a cross-section of industries. The participating organizations selected the modules according to the need for such skills in their organizations. An essential component of this testing process was a pre/post evaluation of the training. This evaluation had a threefold objective for both the training provider and the implementing organizations:

a) To determine if the training itself was effective in terms of transfer onto the job, so that the training could be more widely implemented.
b) To demonstrate relatively simple and cost-effective examples of how to measure outcomes from the training. For example, many organizations expressed an interest

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in determining the bottom-line impacts of training. This evaluation demonstrated that such data could be obtained without large investments in terms of time and money.

c) To determine if the evaluation instruments were valid and reliable.

Research Questions

The evaluation of the leadership training program was focused on answering the following questions: Was there improvement in the trainees' knowledge and awareness, as well as in the practice of the skills and behaviors taught in the training program from the perspective of the participants and their managers? Were trainees and managers able to make the link between the skills acquired in training and how they would impact the goals of the work group and the organization as a whole? Do participants see frequent opportunities to practice such skills on the job? And do the trainees and their managers see an impact on the bottom-line with regard to increased productivity when they do apply such skills on the job? What would make training interventions more effective from the perspective of both managers and trainees?

Methodology

We adhered loosely to the Kirkpatrick typology in terms of a framework for this multi-phased evaluation. The major deviation from the Kirkpatrick typology is that the results of the evaluation were intended for use in a formative fashion to modify both the leadership training and the instruments. Phase 1 consisted of gathering levels 1, 2, 3, and 4 data from the 6 organizations that participated in the beta-tests. This paper deals mainly with this first phase of the evaluation. Phase 2 of the evaluation will involve further gathering of data as well as more rigorous statistical analyses with a larger data base to work with. Phase 3 of the evaluation will involve gathering more in-depth level 4 data. This will involve calling back trainees and their managers to ask for specific items such as phone logs, meeting logs, and other documents to obtain more quantitative information that can then be linked to specific quantitative measures such as numbers of hours in productivity gains, percentage decline in complaints, etc.

We surveyed participants in the leadership program before and after the training. The format of the training program is modular and consists of twelve different units. The sample consisted of trainees and their managers from six organizations including banking, manufacturing, healthcare, and education that participated in a pilot of the leadership program.

We did not gather feedback on participants' reactions to the training (level 1), since some research studies have shown that reaction to the training has little bearing on learning of the skills and skill transfer (Bretz & Thompsett, 1992; Dixon, 1990). However, as a corollary to data gathering relative to level 4 results, we obtained information on participants' reactions to the training they received.

To obtain level 2 data, we administered mastery tests to trainees before and after the training. The purpose of the surveys were to determine knowledge and awareness of the concepts covered in training both pre and post training. A total of 105 trainees completed these tests before and 67 after training. The test items were a mix of multiple choice, true/false, and qualitative critical incidents. We devised a scoring key for scoring the items. Since some of the items were critical incidents, prior to scoring we devised a scheme for awarding points based on the concepts used in the critical incidents described by trainees.

We were also interested in gathering data regarding transfer of training to the job (level 3 data). To this end, a total of 81 training participants and 72 managers from the six organizations were surveyed. Since the organizations used different modules, we created customized questionnaires for each organization based on the modules used by trainees in those organizations. Thus, the number of items on the questionnaires varied by organization. We administered a survey to training participants and their managers both before and after the training. The survey items were rated on a seven-point Likert-type scale and asked participants and their managers to rate the extent to which a particular behavior was used/observed on the job. In addition to establishing current skill levels, the post training survey also asked trainees and their managers to retrospectively rate trainee skills prior to the training. This provides an additional measure of trainees' skill improvements, by adjusting for greater awareness about the skills covered in training, following the training.

We tabulated the data by organization, since they used different combinations of the training modules.

Level 4 data was gathered by conducting in-depth telephone interviews of a sample consisting of a subset of 16 trainees and 12 of their managers who completed level 3 surveys. We also interviewed 3 training administrators to get an additional perspective. These interviews occurred approximately one month subsequent to the training and were about 45 minutes in length. We first faxed copies of the survey to trainees and their managers, since we wanted them to be able to answer the questions in as detailed a way as possible. Then we conducted telephone interviews referring to the surveys they had received via fax. We asked trainees and their managers to focus on specific instances of how these skills were used and asked them to describe the impact of using such a skill on the work group and ultimately on the organization

Results

In this first phase of the study, we conducted some simple analyses of the data, including mean scores pre and post training with level 2 and level 3 data. Although we conducted t-tests on the data from one of the organizations that had a slightly larger sample relative to the others, we found no significant differences between pre and post scores, even though the actual differences in the ratings were respectable. This is probably an artifact of sample size. Therefore, we decided to gather more data before conducting further analyses due to the small size of the samples from the other organizations. In addition, some qualitative analyses of level 4 data were conducted. Results from this phase of data analysis indicate the following for each level of data:

Trainees' Reactions to the Training (Level 1 Results). Telephone interviews with trainees and their managers indicated that the training was well received by trainees. Both groups felt that the skills learned in training would be useful to them in their work.

Knowledge Gains (Level 2). In general, trainees showed an overall improvement in their knowledge and awareness of the skills covered in the training. However, many trainees did not fully complete their surveys. This may be due to the fact that trainees were asked to complete these level 2 mastery tests as well as level 3 skill transfer questionnaires. Moreover, the mastery tests included critical incident type "essay" questions. Thus, the results indicate that these surveys need to be substantially revised to make them less lengthy and cumbersome.

Table 1. Pre and Post Training Knowledge Gains (Grand Means)

	Pre	Post	Difference
Company 3	1.11	2.18	1.07
Company 4	1.11	2.08	0.97
Company 5	1.09	2.06	0.97
Company 2	1.90	2.53	0.63
Company 1	1.03	1.10	0.07

Skill Transfer (Level 3). Trainees and their managers saw improvements in trainees' skills from both before to after training and retrospectively before to after training. Both groups indicated that trainees practice many of the skills acquired in training to a greater extent than before tho training. These ratings were relatively consistent across the various organizations, which indicates that the questionnaires have face validity.

Table 2. Pre and Post Training Skill Transfer (Grand Means) for Self Ratings

	Pre	Post	Difference
Company 1			
Managing Your Priorities	4.26	4.98	0.72
Moving from Conflict to Collaboration	4.53	5.14	0.61
Personal Strategies for Navigating Change	5.08	5.63	0.55
Handling Emotions Under Pressure	4.71	5.22	0.51
Giving and Receiving Constructive Feedback	4.73	5.19	0.46
Company 2			
Managing Your Priorities	4.27	5.31	1.04
Proactive Listening	5.10	5.97	0.87
Giving and Receiving Constructive Feedback	4.71	5.55	0.84
Company 3			
Handling Emotions Under Pressure	4.97	5.47	0.50
Moving from Conflict to Collaboration	5.09	5.58	0.49
Giving and Receiving Constructive Feedback	5.04	5.46	0.42
Company 4			
Moving from Conflict to Collaboration	4.21	5.71	1.50
Influencing for Win-Win Outcomes	4.09	5.56	1.47
Managing Your Priorities	3.99	5.38	1.39
Company 5			
Basic Principles	4.83	5.97	1.14
Influencing for Win-Win Outcomes	4.70	5.84	1.14
Managing Your Priorities	5.19	6.05	0.86
The Leader in Each of Us	5.43	6.13	0.70

Table 3. Pre and Post Training Skill Transfer (Grand Means) as Rated by Managers

	Pre	Post	Difference
Company 1			
Managing Your Priorities	4.64	5.50	0.86
Giving and Receiving Constructive Feedback	5.28	5.57	0.29
Handling Emotions Under Pressure	5.42	5.54	0.12
Moving from Conflict to Collaboration	5.33	5.42	0.09
Personal Strategies for Navigating Change	5.42	5.50	0.08
Company 2			
Managing Your Priorities	4.44	5.09	0.65
Company 3			
Handling Emotions Under Pressure	3.72	4.44	0.71
Moving from Conflict to Collaboration	3.84	4.16	0.32
Giving and Receiving Constructive Feedback	4.02	4.14	0.12
Company 4			

	Pre	Post	Difference
Influencing for Win-Win Outcomes	4.23	5.43	1.20
Moving from Conflict to Collaboration	4.34	5.36	1.02
Managing Your Priorities	3.95	4.70	0.75
Company 5			
Basic Principles	4.17	5.67	1.50
Influencing for Win-Win Outcomes	4.27	5.73	1.46
Managing Your Priorities	4.72	5.71	0.99
The Leader in Each of Us	5.10	5.80	0.70

Bottom-line Impact on the Workgroup and the Organization (Level 4). In-depth interviews indicated that trainees and their managers had a clear view of how skill improvements were tied to the organization's bottom-line. The following examples of anecdotal data indicate that managers and trainees see bottom-line impacts on the organization from increased use of skills on the job.

Managers "... an outcome is that when people call, it doesn't become a bigger problem it doesn't get exacerbated or extended, she generally brings closure to most issues. The benefit to the district is that it saves a lot of people a lot of time. I rarely have to deal with these issues because she does it for me."

"...better production, less company loss monetarily, because when accounts are worked properly, we save money. I have seen where it has enabled us to work out a plan with a customer instead of foreclosing...you can see a decrease in the delinquency and a smaller inventory in foreclosure properties. That's hardcore evidence right there in black and white..."

Trainees "...I have a whole file of concerns that have been resolved. We have 25 schools in this area and we don't have any unresolved concerns at this point."

"...you cut out the complaints and all that...We just, in the past two audits that we've had have been excellent whereas before, they were marginal. You could just see the difference. Coming from marginal to excellent-that's a big accomplishment."

Both groups also indicated that they would be able to provide hard data in this regard. The next phase of this evaluation will gather and examine information such as phone logs and work logs to determine numbers of hours in productivity gains, in order to quantify this data to some degree.

Discussion

While the results of the evaluation were positive for the most part, some interesting implications emerged for organizations considering training solutions:

Training is considered effective when a clear need for the skills taught in training exists. This was apparent in the following example. When we asked a manager of an employee in a Health Maintenance Organization who attended training related to managing priorities whether she saw improved skill use, she indicated that "...from knowing this person, she's already pretty skilled at organizing her priorities, but if there is a difference it's going to be pretty slight, because she is already probably top of the scale in terms of knowing how to organize herself..." Another manager in the same organization indicated that the unit related to managing priorities was the most useful, since self management was a key skill that her customer service representatives needed. In contrast, the manager felt that the training that focused on proactive listening was the least useful to her group since the group, because of the nature of their work, were already highly skilled listeners. Therefore, the manager indicated that if there were improvements in listening skills, they would not be discernible to her. These examples illustrate that in order to maximize training dollars in an organization, it is important to determine specific needs prior to the training.

Organizational support is a critical element in ensuring the success of a training program. The following example indicates that without management support, the trainee is hamstrung in their efforts to practice the skill on the job. An example emerged in our interviews with a manager at a hospital. The manager indicated that she would have a difficult time assessing the employee's performance, since "the person we are evaluating is not a supervisor...I don't necessarily see leadership qualities in this person." The employee, however, felt that the training had helped to improve her skill level.

The examples serve to illustrate some of the pitfalls inherent in an evaluation effort, unless all success factors are considered. To begin with, training should not necessarily be seen as a panacea for all ills, without other issues being considered. If these other factors are not considered, the training program being evaluated can become the scapegoat given poor results from an evaluation. In many cases, the program may be valuable, but misapplied. In such situations, the danger is, of course, that the program or even all training may be labeled as ineffective. This is why Brinkerhoff (1994) insists on organizational context as a critical element in a productivity improvement initiative and cautions that training is merely a slice of that context.

Finally, it is important to note that this evaluation effort deviated from the Kirkpatrick typology in that the results are being utilized in a formative fashion to modify both the instruments and the leadership training program.

Contribution of this Research to New Knowledge in HRD

This study builds upon the existing body of evaluation research and reinforces the notion that evaluation cannot occur in a vacuum; divorced from the organizational and job context (Brinkerhoff, 1994). The research indicates that context is an important element of training effectiveness—i.e., training to skills that are immediately usable in a job context allows the training to become a part of a worker's skill repertoire. Thus, this research points to the need for some assessment of need at the individual level as well as a need for an assessment of organizational support as an integral part of an evaluation and needs assessment effort. If an OD intervention is well structured from the start, the results will speak for themselves. This effectively should eliminate the need to justify training through resource and cost intensive evaluations. In effect, training and organizational development professionals should become "performance consultants" (Robinson, 1995) and determine ways in which such interventions can be proactively linked to the bottom-line. Training should become one more way of addressing specific productivity issues rather than randomly offered as professional development, with no links made to organizational and workgroup goals.

The study also provides an example of a blended approach to gathering evaluation data. While quantitative data analysis is critical, qualitative data can be rich in detail and often provide as much information as purely quantitative information gathered via a survey. Many of the client organizations who received some of this preliminary data found the information very informative and actionable.

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Development and Evaluation of the Critical Outcome Technique (COT)

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The COT represents an important development in post-hoc program evaluation. Until now, the primary avenue of being able to predictably demonstrate the results of HRD has been through a systematic development process including up-front performance analysis and systematic evaluation.. The COT, metaphorically similar to the famed Critical Incident Technique, functions within the milieu of an ongoing organization while yielding powerful critical outcome data that are verifiable and quantifiable.

The concept of evaluating human resource development (HRD) programs is encountered repeatedly in the literature on organizations; however, widespread disagreement exists with respect to the efficacy of practical program evaluation. While the importance of evaluating HRD programs has been emphasized by scholars and practitioners (Goldstein, 1986; Kirkpatrick, 1994; Nadler & Nadler, 1989) many lament the overwhelming lack of evaluation which actually occurs within organizations. Indeed, many assert that even when evaluations are conducted, they are conducted in a manner which fails to demonstrate results which translate to the bottom-line (Swanson & Gradous, 1988). Demonstrating bottom-line impact is the Gordian knot of evaluation; by not demonstrating the effectiveness of programs those responsible for the creation and/or implementation of HRD programs risk not only their credibility, but their probability of receiving organizational resources (Fitz-Enz, 1994; Kirkpatrick, 1994; Kusy, 1988; Phillips, 1996).

A central theme in discussions of program evaluation is that demonstrating results, or benefits, of development programs is formidable due to difficulties associated with establishing causality. To the end of demonstrating the instrumental value of development programs, techniques rooted in basic research methodologies have been regularly proposed (Grove & Ostroff, 1990; Arvey & Cole, 1989; Goldstein, 1986). Such approaches rely on control appropriate for experimental and quasi-experimental research, but, it is often argued that their practical utility is questionable due to a bevy of constraints which ultimately draw their validity into question.

In response to methodological arguments, Cronbach (1982), asserts that evaluation is an art, and that every evaluation should represent an idiosyncratic effort to meet the needs of program stakeholders. Thus, while scientific, or experimentally designed, evaluation may strive to meet the research standards of the investigators peers, program evaluations need to meet the interests of the stakeholders, to yield maximally useful information for decision makers.

Unfortunately, in the eyes of many HRD professionals, many decisions about investments in development programs (within and between organizational departments) revolve about the issue of resource allocation. Consequently, most models of program evaluation have a financial or results analysis component. Indeed, it has been demonstrated that evaluation data regarding the effectiveness of programs, specifically bottom line results, is crucial to garnering support for the HRD function from non-HRD managers (Carnevale & Schulz, 1990; Kusy, 1988).

Certainly most scholars and practitioners would agree that program results influence and are influenced by elements of a larger organizational system. The preponderance of literature on the behavior of systems in recent years is evidence of this. For this reason, many scholars and practitioners have advocated that HRD interventions be thought of in terms of improving performance in their broader systemic context (Brinkerhoff, 1997; Rummler & Brache, 1995; Swanson, 1994).

These scholars eschew the notion that training is the sine qua non response to many perceived performance deficiencies. In order to address such deficiencies, they advocate often extensive programs of analysis to understand and identify performance improvement requirements. For instance, Swanson (1994) cites the analysis phase as the most crucial part of the performance improvement process. Evaluation, in this model, is based directly on performance objectives determined in the analysis. The performance requirements are the basis for both performance objectives of the intervention and the follow-up evaluation system assessing their attainment. This process, while valuable to the organization in many ways, typically requires a significant

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investment in both time and financial resources.

In contrast to models of evaluation which rely on front-end analysis are models which assume that HRD programs (typically training programs) are instrumental in producing a desired end state. The objectives they purport to evaluate are often based on general assumptions about needs or perceived needs.

In other cases, needs are determined on a case-by-case basis. For example, many companies offer regularly scheduled development programs that employees can sign-up for on an individual need basis. For example, many companies offer general-- but high need-- computer training programs into which employees can self select.

Evaluation of such programs, since they are not linked to predetermined performance requirements for specific groups or individuals, do not usually have rigorous assessments of the organizational usefulness of the program. If they are evaluated at all, it is typically at the level of participant reactions. Thus, with all the discussion about performance evaluation, there is very little evaluation of performance outcomes that actually takes place (Swanson, 1989).

Research Problem and Objectives

This study is a direct attempt at addressing the problem of meeting the profession's need for a valid method for determining and valuing critical outcomes resulting from HRD interventions not based on rigorous up-front performance analysis. Three research questions were posed as a means of addressing the problem:

1. Can a Critical Outcome Technique (COT) be developed that would logically elucidate the critical outcomes resulting from any HRD intervention?
2. Will the COT produce identifiable critical outcomes?
3. Will the COT work in an actual organizational setting?

Methodology

The COT development question, Research Question #1, was addressed through literature, logic, systems thinking, and expert review at various stages of development. The evaluation of the COT questions, Research Questions 2 and 3, were addressed through the case study application of the COT in a profit-making organization. The first case study solicited COT critical outcome definition data from 13 independent and varied HRD interventions throughout a multinational corporation. The second application was an in-depth application and assessment of HRD program in another corporation using the COT. Attention was paid to verifying the reliability and validity of the data along with the workability of the COT in a context of an intervention that had a limited up-front analysis.

Research Findings: Question #1

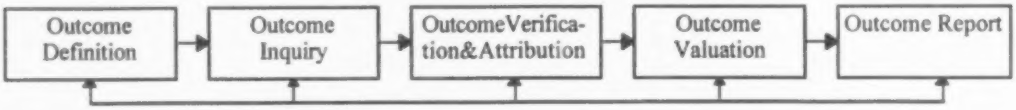
Can a Critical Outcome Technique (COT) be developed that would logically elucidate the critical outcomes resulting from any HRD intervention? A review of the literature used as the basis of developing the COT illustrates the following problems in the area of HRD program evaluation:

1. Evaluation of the results of training often requires complex designs which are very difficult to implement in practice;
2. To evaluate programs in the context in of the larger system in which they are designed to operate, it is optimal to use techniques which rely on rigorous front-end analyses which require larger investments of resources than most organizations can practically allocate;
3. The theoretical models the profession currently uses to guide evaluation lack technique necessary to evaluate outcomes in an efficient fashion;
4. Additionally, almost all such models rely on the assumption that a training program was instrumental in achieving a given objective or set of objectives, an assumption which in the absence of an analysis of performance requirements is tenuous at best.

These themes point to the desirability to have a procedure for demonstrating value-added *outcomes* of HRD programs not requiring front-end analysis. Such a technique should be relatively easy to use, yet able to generate valid and reliable data about the actual outcomes of a program. Additionally, such a procedure should be flexible enough to be used *after* a program has been completed in the absence of front-end analysis data regarding program objectives.

Presentation of the COT Model. A model of the Critical Outcome Technique (COT) appears in Figure 1.

Figure 1. Model of the Critical Outcome Technique



Outcome Definition. The primary question of concern in this phase is, "What were the intended critical outcomes of this program?" Individuals associated with the approval and development of the program are utilized as the data source as they are most likely to be aware of the intended objectives of the program.

Follow-up questions are utilized to operationalize the definitions of outcomes. It is important to distinguish between outcome statements and activity statements in the evaluation of programs. Activities statements contain non-specific language. For example, "The objective of this program was to build partnerships between departments." In contrast, outcome statements are operationalized; such statements can answer the question, "How will you know when the outcome has been achieved." In the previous example, an operationalized outcome statement would be something like, "The intended outcome of this program was an increase in sales through improved communication. Because operationalization of intended outcomes occurs in the Outcome Definition phase, metrics, or ways of assessing if the outcome occurred, must also be defined, because it is by them that the program's success will be assessed.

Outcome Inquiry. The main question in this phase is, "What were the actual outcomes of the program?" Actual outcomes of the program may be intended (as defined by program sponsors) or unintended. The data collection source in this phase is program participants. These individuals have the most knowledge about how their behavior, and hence outcomes, were impacted by a program. The preferred data collection technique in this instance is an interview or focus group. However, if the outcome metric is clearly defined, it may be adequate to simply send out a questionnaire to gather data.

Outcome Verification. This phase addresses the questions, "Did the outcome(s) really occur as reported by the participants?" and "To what degree would the outcome(s) have occurred in the absence of the program?" The first question is best answered by program stakeholders. For instance, in the case of a sales communication training program, a sales manager might be asked to verify that a sale actually occurred as reported by a program participant.

Regarding the attributability of the outcome to the program, we encounter all kinds of methodological difficulties which are, as indicated above, best addressed by rigorous basic research methodologies. In response to such concerns, we must remember the arguments put forth by Cronbach (1982) and Patton (1987) that program evaluation represents not a rigid representation of the "truth." More appropriately, program evaluation represents an artful effort to produce information upon which decisions can be made. In this sense, estimates of the attributability of an outcome to a program should be reasonably accurate and not 'right on the money.' Astute program evaluators will apprise themselves of phenomena such as primacy and recency effects, halo effects, and other behavioral patterns which may affect the accuracy of an estimate. In order to ensure such estimates are closer to being accurate representations, it is recommended that more than one data source be consulted. It is also recommended that such sources be investigated independently of one another, to avoid any inflation or deflation of estimates due to social desirability or other factors which influence individual cognition in group settings.

Outcome Valuation. In this phase, the primary question of interest is, "How much is this outcome worth?" Admittedly, this is a difficult judgment to make; however, as in the case of attributability, more estimates of the value of an outcome are better than fewer. In some instances, a given outcome metric may not have an assignable financial value. In such cases, the outcome must be valued in some other way. For instance, if the outcome of a program was a reduction in the number of customer complaints about a product, then the approximate number of complaints reduced should be noted. This way, the outcome still has value, even though its financial implications might be difficult to ascertain.

Outcome Report. The final phase of the COT is the production of an *Outcome Report*. Such a report should, in the spirit of Cronbach (1982), Patton (1987), and Brinkerhoff (1995), represent an attempt to satisfy the needs of the customer of the evaluation. For instance, if the evaluation is intended for a general audience, it is probably best not to include elaborate descriptions of reported outcomes. With every outcome report, data should be accessible, to back up the report if necessary. The model report will be developed in a later phase as this technique is developed further.

Research Findings: Question #2

Will the COT produce definable critical outcomes? The purposes of the first case study were to: (1) to determine the overall status of selected HRD programs in the corporation through an extensive program audit and (2) to specifically determine if the COT is capable of determining definable critical outcomes, post hoc.

HRD Program Status. Each program submission was compared against a model of "ideal practice" in the form of the Training for Performance System: Field Handbook (Swanson, 1996). It is important to note that most auditing practices ask the question, "Did they do what they said they were going to do?" This case study audit asked much more rigorous question: "How does what they did stand up to ideal best practices?" Given this second question, the best practices found in one organization may not be considered best practices when compared to the ideal or the larger pool of practice.

HRD efforts take place in thirteen (13) formally established HRD divisional work groups throughout the corporation. Each HRD function within each of the 13 work groups was asked by corporate HRD to identify the single program that was most costly and which would be continued in 1997. A copy of the full 80 page report is available (Swanson & Swanson, 1997). A summary of the assessment is contained in Figure 2: Evaluation of "Training Practices" compared to "Ideal Practices." The following results are based upon the materials submitted to the auditors. The working assumption was that all available documentation had been provided to the researchers. Thus, the working assumption was that if no documentation was submitted for a particular HRD phase-- analyze, design, develop, implement, and evaluate-- then no activity took place within that phase.

The profile of Figure 2 confirms most assumptions about HRD practices: (1) Programs vary in quality from one to another and (2) the analysis and evaluation phases are the weakest areas of practice in the profession compared to design, development, and implementation.

Outcome Definitions. The description of each the 13 programs and the stated and/or implied objections of each were fundamental in deriving the outcome definition for each. The outcome definition is the basis for the execution of the COT. The program description, objectives, and outcome definition (critical outcome inquiry question) for each of the 13 programs follow:

(1) ***Essentials of Management.***: Three day supervisor training dealing heavily with interpersonal skills (e.g., communicating expectations, coaching, giving effective feedback, managing performance, managing conflict) for managers with 6-18 months' experience.

- Stated Purpose: To enhance the effectiveness of supervisors and managers who are relatively new to their position or who have received little formal training as managers, with a focus on people management skills.
- Outcome Definition: Has a critical outcome (good or bad)-- such as complaints and/or filed grievances--occurred in your work setting as a result of your participation in the Management Essentials program?

(2) ***Overview of Insurance Business***: A three-phase program offered once a year consisting of a one-day kickoff Session, two months of Advance Assignments carried out as a team, and a final three-day seminar of team report-outs, lectures by senior manager subject matter experts on eight topics, and discussions.

- Stated Purpose: To provide a forum for high-potential people to learn from senior management and from one another about the principal external and internal drivers that impact the business of a shareholder-owned, multiple-line insurance company. To explore how the corporation competes for both custome[illegible]nd capital to create long-term shareholder value.

- Outcome Definition: Has a critical outcome (good or bad)-- such as new staregic initiatives-- occurred in your work setting as a result of your participaction in the Overview of Insurance Business program?

(3) ***Applying Underwriting Skills: Computer-based Program***

- Description: A CD-ROM computer-based training program designed for both middle market and small case salespeople with less than one year's experience in the corporation. The module contains basic-to- intermediate level underwriting information.
- Stated Purpose: To create an understanding of the underwriting process for a profitable sales career as well as the salesperson's role within this process.
- Outcome Definition: Has a critical outcome (good or bad)-- such as sales or proposal accuracy-- occurred in your work setting as a result of your participaction in the Applying Underwriting Skills program?

Figure 2: Evaluation of "Training Practices" compared to "Ideal Practices"

	ANALYZE		DESIGN		DEVELOP		IMPLEMENT		EVALUATE		
SUMMARY											
	Perf.-Exper.		Prog.-Les.		Mat.-Pilot		Logis.-Sched.		PLS-Report		
Rating											
	1.1	1.2	2.1	2.2	3.1	3.2	4.1	4.2	5.1	5.2	
PROGRAM AREA:											
• Essentials of Mgmt.	L	M	H	H	H	H	H	H	M	H	H
• Insurance Business	L	L	M	L	M	L	L	M	L	L	L
•Underwriting Skills	H	H	H	H	H	H	H	H	M	L	H
•Essent. of Leadership	M	M	H	M	H	L	M	H	M	L	M
•Dale Carnegie Course	L	L	L	L	M	L	L	M	L	L	L
•Diversity Awareness	L	M	H	H	M	H	H	H	M	H	H
•Non-Financial Mgers	L	L	L	L	H	L	L	M	M	L	L
•Consultative Selling	L	M	M	L	M	H	L	H	M	L	M
•Marketing Leadership	L	L	L	L	M	L	L	M	L	L	L
•Consultative Selling	M	M	M	L	L	L	L	M	L	L	L
•Project Management	L	H	H	M	L	M	H	H	M	L	M
•Sales Training Forum	L	L	L	M	L	L	H	H	L	L	L
•Action Learning	H	H	H	H	M	H	H	H	M	M	H
SUMMARY Rating	L	M	M	M	M	M	M	M	L	L	

H = high; consistent evidence/good practice; M = Medium; some evidence/marginal practice; L = low; no evidence/poor practice

(4) ***Essentials of Leadership***: A three-day program consolidating three former Essentials of Leadership programs into one. The program is an extension of the Basics of Leadership Development (BOLD) initiative and is geared to experienced managers.

- Implied Purpose: To provide knowledge and skills training for experienced managers in the areas of performance management, communication, and coaching.
- Outcome Definition: Has a critical outcome (good or bad)-- department effectiveness-- occurred in your work setting as a result of your participaction in the Essentials of Leadership program?

(5) ***The Dale Carnegie Course***: An off-the-shelf motivational course in personal development through assigned readings, class exercises, and speaking assignments.

- Implied Purpose: To develop or improve personal traits and skills including performance and effectiveness, leadership, memory and powers of concentration, courage and confidence and effective communication in addition to learning how to control stress and excessive worry.
- Outcome Definition: Has a critical outcome (good or bad)-- personal performance ratings-- occurred in your work setting as a result of your participaction in the Dale Carnegie Course?

(6) ***Diversity Awareness***: An interactive 1-1/2 day non-confrontational and inclusive workshop consisting of pre-reading assignments, small group work, videos, and large group discussions, activities and interactions.

- Stated Purpose: To heighten selected investment management and investment law employees' awareness of diversity and diversity issues.
- Outcome Definition: Has a critical outcome (good or bad)-- improved work-group effectiveness or a reduction of complaints and/or filed grievances occurred in your work setting as a result of your participaction in the Diversity Awareness program?

(7) ***Finance for Non-Financial Professionals***: "Enjoyable" approach to learning about finance using a manual having cartoon figures and clear, easy to understand examples, lectures and activities to practice and test what's been learned throughout the course.

- Stated Purpose: To educate attorneys and paralegals on how the corporation makes money: the fundamentals of finance, accounting principles, and business units as capital.
- Outcome Definition: Has a critical outcome (good or bad)-- legal desisions impacting finacial outcomes-- occurred in your work setting as a result of your participaction in the Finance for Non-Financial Professionals program?

(8) ***Consultative Selling Skills***: An interactive two-day instructor-led course covering a 7 step "consultative" sales process for all levels of production underwriters who work with field agents (producers). It consists of numerous activities, discussions, and exercises including customization for in the form of role playing, videotaping and one-on-one feedback.

- Implied Purpose: To ensure that field staff have the skill sets that will make them most helpful to their agents and thereby help achieve the profitable growth objective.
- Outcome Definition: Has a critical outcome (good or bad)-- such as new sales or add-on sales-- occurred in your work setting as a result of your participaction in the Consultative Selling Skills program?

(9) ***Marketing Leadership II***: A three day instructor-led course dealing primarily with marketing strategy via lecture, readings, and work group exercises using a computer-based marketing simulation program.

- Implied Purpose: To build marketing strategy knowledge and skills for individuals who deal directly with customers and have completed the basic marketing leadership seminar.
- Outcome Definition: Has a critical outcome (good or bad)-- such as new marketing initiatives-- occurred in your work setting as a result of your participaction in the Marketing Leadership program?

(10) ***Consultative Selling***: An interactive two-day instructor-led course covering a 7 step "consultative" sales process for all levels of production underwriters who work with field agents (producers). It consists of numerous activities, discussions, and exercises including customization in the form of role playing, videotaping and one-on-one feedback.

- Implied Purpose: For field-based sales associates and key people in the field client services organization and in the home office who support the consultative sales process (e.g., National Accounts Management and Transition Management).
- Outcome Definition: Has a critical outcome (good or bad)-- such as new sales or add-on sales-- occurred in your work setting as a result of your participaction in the Consultative Selling Skills program?

(11) ***Project Management Certificate Program***: The program is composed of four individual curriculums which support the overall objective of professionalizing the role of project managers in the corporation. Curricula includes: a Project Management Certificate Program, a Coaching Certificate Program, a Management/Customer Workshop, and Project: Quickstarts.

- Stated Purpose: To improve corporate staff project management capabilities through training, on-the-job coaching, and exposure to (external) PM experts and ideas. Specifically, to provide specific training in the nine (9) major areas of project management (as identified in Project Management Body of Knowledge). The training focuses on the "what" (process,etc.).
- Outcomes Definition: Has a critical outcome (good or bad)-- project cost overruns and meeting project deadlines-- occurred in your work setting as a result of your participaction in the Project Mgt. Certificate?

(12) ***Sales Training Forum***: A two-week program offered 1-2 times a year primarily for new sales reps. Specific content of each offering is determined by needs input from participants, sales and business unit managers.

- Implied Purpose: To expose participants to consultative sales training, to an underwriter's job

  in the home office, information regarding products, new organization strategies, how customer problems are to be addressed, etc.

- Outcome Definition: Has a critical outcome (good or bad)-- time to meet minimum performance standards-- occurred in your work setting as a result of your participaction in the Sales Training Forum?

(13) ***Action Learning Program***: A leadership development program for high potential cross cultural managers which utilizes an action learning approach (learning while solving a pressing business issue), thus focusing on both people *and* business development.

- Stated Purpose(s): To strengthen strategic and tactical abilities in building and managing an insurance business; To become familiar with the corporation's international leadership model, assess own strengths and development needs against model, and build/reinforce personal development objectives/plans; To increase skills in leadership, project management, and working in borderless teams; To understand the interrelationship of issues involving teams, interpersonal skills, peer influence and group dynamics, and the importance of these issues to leadership capability; To review the current international business strategy and, if appropriate, develop a new and comprehensive strategy to ensure continued growth and profitability; To establish a network of global contacts for use in the future.
- Outcome Definition: Has a critical outcome (good or bad)-- business effectivesness-- occurred in your work setting as a result of your participaction in the Action Learning program?

Research Findings: Question #3

Will the COT work in an actual organizational setting? The purpose of the second case study was an in-depth application and assessment of HRD program in another corporate HRD program using the COT.

Critical outcomes can be thought of as (a) business results at the organizational, process or individual levels and/or (b) financial results or benefits in terms of money or monetary ratios. Business results that are monatized become financial results. For example, the business result of increasing market share by 5% could be converted into numbers of sales times the financial value of each sale. Another example would be to increase the hourly production rate of injection molded items (that meet quality standard) from 30 to 35. In each of these examples the business results can be monitized and then expressed in terms of financial results.

This case study involved the post hoc evaluation of critical outcomes from a communication development program for sales personnel in a major insurance company. The sales force sells insurance plans to employers. The performance improvement intervention in this case included training that was provided to several hundred sales personnel through 24 program offerings at various sites throughout the nation over a six month period.

The company had an ongoing commitment to generic communication training for their sales force. Given this base of support, the manager conducted a hurried analysis that confirmed the loss of business as a result of inadequate communication skills and a more precise profile of the specific communication expertise required. Supervisors of the sales personnel were also trained in the communication skills, were recruited to assist in the role-playing assessments of expertise during training, and in conducting follow-up evaluations and encouragement back on the job.

Utilizing the COT, it was determined that the critical outcome was *increased sales*. The company has a system for tracking sales by salesperson, office, region, and product. They also have standard gross and net financial measures per sale. The connection between available financial measures and the specific of this case were not known at the onset and became clear through the application of the evaluation model.

The decision was to identify sales that were attributed to the the program by participants and to do this 60 days following the effort. Sales people and their supervisors were asked to report on any sales, or portion of sales, attributable to the communication program. The position taken was these estimates would be underestimates and that the specific sale had to be recorded if there were any questions about the data base. Thus, these were not perceptions of performance. Rather, they were verifiable sales cautiously attributed to the intervention. The total number of attributed sales were multiplied by the net worth of an average sale. A meeting with the comptroller yielded this figure following a zigzag conversation about available financial data. The direct cost of the HRD intervention was compared to the net profit from the reported sales attributable to Communication Development program to determine the ROI.

It was concluded that the COT functioned effectively and efficiently in this case. The internal challenges from corporate decision makers come in two areas: (1) the questioning of the financial worth of the selected critical outcome and (2) the questioning of the validity of the core critical outcome data. Both were sustained. The financial worth of the critical outcome was established by the comptroller. Her credibility and/or lack of bias for HRD validated the COT effort. In terms of the validity of the sales data, each sale was listed (verifiable) and judged by both the participant and participants manager to be a result of the HRD intervention (attributatble).

Conclusions

Findings from this study provide *affirmative support* to the three research questions:

1. Will a Critical Outcome Technique (COT) be developed that would logically elucidate the critical outcomes resulting from any HRD intervention?
2. Will the COT produce identifiable critical outcomes?
3. Will the COT work in an actual organizational setting?

The COT represents an important development in post-hoc program evaluation. Until now, the primary avenue of being able to predictably demonstrate the results of HRD has been through a systematic development process including up-front performance analysis and systematic evaluation. The COT, metaphorically similar to the famed Critical Incident Technique, functions within the milieu of an ongoing organization while yielding powerful critical outcome data that are verifiable and quantifiable.

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Monitoring the Effectiveness of a Performance-Focused Human Resource Development Workshop at Andersen Consulting Three Months After the Workshop

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This study focused on measuring the effectiveness of an Integrative Learning workshop provided to 506 human resource professionals in Andersen Consulting's North American practice area. The Performance Change Curve was introduced as a framework for self-report data regarding targeted performance change three months after the workshop. Implications are drawn for future performance-focused education efforts at Andersen Consulting.

Keywords: Performance-Focused Learning, Performance Change, Integrative Learning, Reflective Learning, Learning Theory, Workplace Learning, Research Results

Andersen Consulting (AC) has pioneered the development and use of performance-focused human resource development programs with its global consulting workforce since early 1993 (Nowakowski, 1994; Montgomery, 1996a). In Fiscal Year 1996 (September, 1995 through August, 1996), Andersen Consulting Education (ACE), Andersen Consulting's internally focused professional development organization, invested more than $17,100,000 in development and delivery of performance-focused human resource development programs for AC's global workforce of 41,000 consultants (Montgomery, 1996b)[1] Measuring the performance return on this investment is recognized as a challenge and a growing business imperative. Research data documenting the effectiveness of these programs has not kept pace with the demand for and development of these programs. In early 1996 AC began collecting feedback survey data from participants in these programs using electronic media. This use of technology has made gathering research data more cost effective and practical.

This study focused on the evaluation of the effectiveness of one 8-hour, Andersen Consulting performance-focused workshop, the "Applied CDM Learning Day," offered to 506 human resource (HR) professionals in AC's North American practice area between March and September, 1996.

Background

In 1995, in order to stay ahead of the growing demand for deeply skilled consulting professionals to meet the needs of its global clients, Andersen Consulting (AC) introduced a competency-based framework for recruiting, staffing, and developing its global workforce of consulting professionals (Montgomery, 1996b). The *Career Development Model* (CDM) (Montgomery, 1996d) was first introduced in AC's North American practice area in a series of information-focused sessions provided to human resource professionals supporting this workforce. It soon became clear that these professionals needed additional support to learn to work with this model in their daily routines. To meet these needs, a performance-focused workshop was developed in December, 1995, using a systems approach to Integrative Learning design (Montgomery, 1996c). The

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[1] This only represents a portion of the financial investment made by Andersen Consulting in developing its global consultants. AC's gross income for the Fiscal Year was in excess of $4 billion and 6.5% was invested in the continuing development of its workforce (Montgomery, 1996b).

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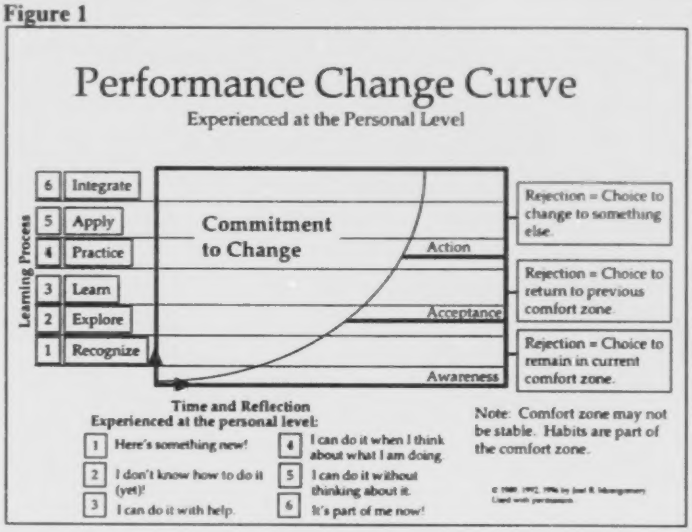
conceptual design for this workshop was tested in February, 1996, and the workshop was piloted in March with very minor changes. . The design for this workshop was introduced at the 1996 Conference of the Academy of Human Resource Development (Montgomery,1996d).

After completion of the workshop, learners were expected to have moved up the Performance Change Curve (Montgomery, 1996a) (see Figure 1) in four areas:

1) Be more proficient in using the Career Development Model in making HR decisions regarding staffing, recruiting, and training.
2) Work more effectively in supporting other HR functional specialties.
3) Regularly think about what they are doing on the job and proactively implement ideas for continuous improvement in the way they work.
4) Proactively share learning and improvement ideas with others to help in the development and growth of AC's HR organization.

Figure 1


Performance Change Curve
Experienced at the Personal Level
Learning Process
6 Integrate
5 Apply
4 Practice
3 Learn
2 Explore
1 Recognize
Commitment to Change
Action
Acceptance
Awareness
Rejection = Choice to change to something else.
Rejection = Choice to return to previous comfort zone.
Rejection = Choice to remain in current comfort zone.
Time and Reflection
Experienced at the personal level:
1 Here's something new!
2 I don't know how to do it (yet)!
3 I can do it with help.
4 I can do it when I think about what I am doing.
5 I can do it without thinking about it.
6 It's part of me now!
Note: Comfort zone may not be stable. Habits are part of the comfort zone.

Research Questions:

1. Can participants use the Performance Change Curve (see Figure 1) as a common framework by which to measure targeted performance change?
2. Will the data regarding growth in targeted performance immediately after the workshop be consistent with the results of the "7-days after" survey?
3. How much growth on the Performance Change Curve did learners experience over the three months following the workshop?
4. Is there a correlation between frequency of personal use of the CDM and learning level on the Performance Change Curve in CDM-related targeted performance over the three months following the workshop?
5. What support activities have the learners experienced with regard to working with the CDM in the three months following the workshop?

Methodology:

The "Applied CDM Learning Day" was conducted in 21 sessions at cities throughout North America during the period March through September, 1996. The number of participants in each session ranged from 11 to 46. Each of the 506 participants[2] was sent an electronic survey seven days after the workshop and three months after the workshop. 221 participants (44%) responded to the "7-days after" survey and 101 participants (20%) responded to the "3-months after" survey.[3] The results of the "7-days after" survey are presented in a separate paper (Montgomery, 1996e).

Only one version of the "3-months after" survey was used. This survey asked learners to place themselves on the Performance Change Curve for each of the four targeted performance areas for three time periods: Before the workshop; immediately following the workshop; and three months after the workshop. Learners were also asked how frequently they used the CDM and how frequently their internal customers used the CDM. The survey then collected frequency data regarding use or involvement in specific activities regarding support for their own learning, organizational support for learning, and knowledge transfer to internal customers.

Survey Composition The "3-months after" survey contained 14 questions divided into three sections. Questions 1 through 4 captured demographic information. Questions 5 through 9 captured information and comments regarding application and use of Andersen Consulting's Career Development Model. Questions 10 through 14 captured self-report data regarding growth on the *Performance Change Curve* for each of four targeted performance outcomes. For all questions other than typing a response, *keywords* were identified beside *radio-buttons*. To select a response, the participant would point over the button and "click" the computer's left "mouse" button. The choices were all made by keyword rather than by number. The Lotus Notes mail-in database was programmed to convert the selections to numerical responses. Data collected in the mail-in database was displayed in "views" matching the questions on the survey. Data displayed in these "views" was then exported into a Microsoft Excel spreadsheet where data analysis was conducted.

Results and Analysis

Targeted Performance

1. I have become more proficient in using the Career Development Model (CDM) in making Human Resource (HR) decisions regarding staffing, recruiting, and training.
2. I have increased my ability to work effectively in supporting other HR functional specialties.
3. I regularly think about what I am doing on the job and proactively implement ideas for continuous improvement in the way I work.
4. I am proactively sharing learning and improvement ideas with others to help in the development and growth of our HR organization.

Survey Questions Focused on Targeted Performance Change

The summary question was: How would you assess your growth in the following areas?

Possible Responses:

- Apply/Do it without thinking about it (5)
- Practice/Do it when I think about it (4)
- Learn/Do it with help (3)
- Explore/Don't know how to do it—yet! (2)
- Recognize/Here's something new! (1)
- Unaware/Blank/Zero Level (0) created by three respondents.

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[2] While total of 506 human resource professionals participated in the workshop. 92 participants participated in workshops conducted after the cut-off date for the "3-months after" surveys used in this study.

[3] For the purposes of the tables in the Results and Analysis section of this paper, the numbers used represent both the actual number of respondents and the percentage of respondents.

Table 1: Targeted Performance Before the Workshop

Level on Change Curve	Performance 1	Performance 2	Performance 3	Performance 4
Apply = 5	8	10	23	21
Practice = 4	28	24	39	35
Learn = 3	21	24	15	23
Explore = 2	28	22	15	10
Recognize = 1	15	16	8	12
Unaware = 0	1	3	0	0
Number of Responses	101	99	100	101
Average Score	2.83	2.81	3.54	3.43

Table 2: Targeted Performance Immediately After Workshop

Level on Change Curve	Performance 1	Performance 2	Performance 3	Performance 4
Apply = 5	13	17	33	32
Practice = 4	40	36	42	34
Learn = 3	30	29	15	22
Explore = 2	16	15	9	8
Recognize = 1	2	2	1	4
Unaware = 0	0	0	0	0
Number of Responses	101	99	100	100
Average Score	3.46	3.52	3.97	3.82

Table 3: Targeted Performance 3 Months After Workshop

Level on Change Curve	Performance 1	Performance 2	Performance 3	Performance 4
Apply = 5	33	29	43	39
Practice = 4	49	44	45	41
Learn = 3	10	20	7	14
Explore = 2	6	4	5	5
Recognize = 1	2	2	0	1
Unaware = 0	0	0	0	0
Number of Responses	101	99	100	100
Average Score	4.05	3.95	4.26	4.12

Table 4: Reported Growth in Targeted Performance Immediately After Workshop

Growth on Change Curve	Performance 1	Performance 2	Performance 3	Performance 4
5 levels up		1		
3 levels up		1		1
2 levels up	10	7	6	4
1 level up	48	50	31	29
0 growth	38	39	63	65
1 level down	5			
2 levels down		1		
3 levels down				1
Number of Responses	101	99	100	100
Average Growth	0.62	0.71	0.43	0.37

Table 5: Reported Growth in Targeted Performance in the 3 months following Workshop

Growth on Change Curve	Performance 1	Performance 2	Performance 3	Performance 4
3 levels up				1
2 levels up	4	4	1	2
1 level up	52	37	28	24
0 growth	44	56	70	72
1 level down	2	2	1	1
Number of Responses	100	99	100	100
Average Growth	0.58	0.43	0.29	0.3

Survey Questions Focused on Use of the Career Development Model (CDM)

A. How often do you personally work with the CDM in your daily Human Resource (HR) activities? (Example: How often do you bring up CDM terms or concepts in your phone calls with customers?)

B. How often are your Operating Group customers demonstrating understanding of the CDM in HR-related conversations? (Example: Partners asking you about staffing by skill track, skill domain, and proficiency levels.)

Possible Responses: Almost always (5); Daily (4); Weekly (3); Monthly (2); Almost never (1); No Response.

Table 6: Use of the Career Development Model

Question	Almost Always	Daily	Weekly	Monthly	Almost Never	No Response
Personal Use	14	40	35	7	4	1
Customer Use	0	15	36	19	25	6

Survey Questions focused on Support for Learning to work with the CDM:

What are you personally doing to increase your own ability to work with the CDM more easily in your daily HR activities? (Example: Working with the C-Map Writer (an on-line tool) once a week to prepare sample skill maps for my customers.)

Figure 2

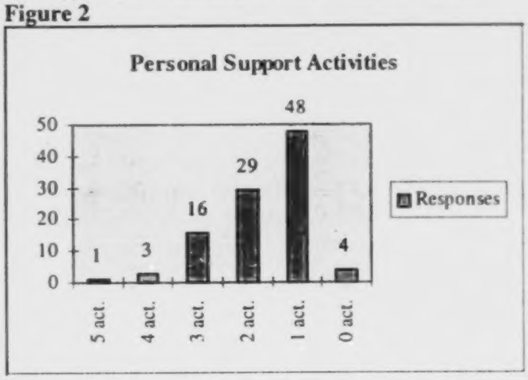


Table 7: Personal Support Activities

	Creating my own job aids	Developing job aids with others	Using job aids	Participating in CDM-related meetings and lunches	Bringing up CDM-related ideas in conversations	Learning to do more with the C-Map Writer tool	Other
Responses	6	8	18	20	67	41	11

What is your operating group doing to help you learn to work with the CDM in daily HR activities? (Example: Lunch & Learn "Brown-Bags" to share CDM-related best practices and ideas.)

Figure 3

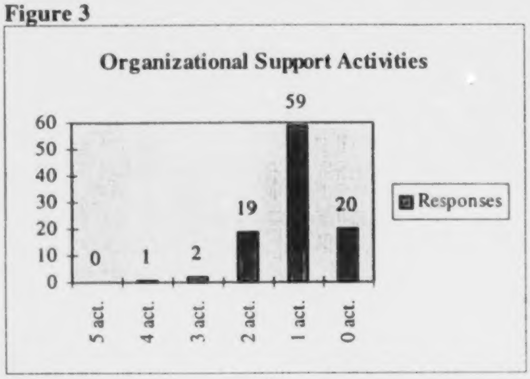


Table 8: Organizational Support Activities

	Job Aids are Developed and Shared	Regular Cross-Functional Team Meetings	Weekly Meetings	Informal Conversations	Lunch and Learn "Brown Bags"	Other
Responses	7	18	7	54	6	15

What are you and your operating group doing to help customers learn how to work with the CDM in their dealings with you? (Example: Taking the time to walk a customer through the C-Map and proficiency plan when speaking about staffing issues.)

Figure 4

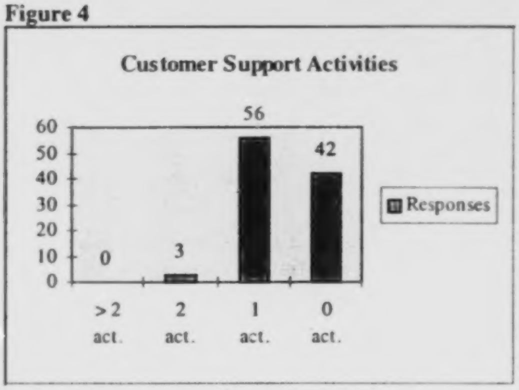


Table 9: Customer Support Activities

	Talking about the CDM in routine conversations	Making special CDM-focused calls	Asking questions using CDM terms	Making recommendations using CDM terms	Other Activities
Responses	59	3	51	38	8

Conclusions:

Research Question 1: Can participants use the Performance Change Curve (see Figure 1) as a common framework by which to measure targeted performance change? Results of the "3-months after" survey indicated that respondents were able to measure their targeted performance change against the benchmark offered by the Performance Change Curve, both in terms of growth and absence of growth.

Research Question 2: Will the data regarding growth in targeted performance immediately after the workshop be consistent with the results of the "7-days after" survey? 77% of the respondents to the "7-days after" survey reported at least "moderate" growth in all four of the targeted performance areas. The wording for the four areas was slightly revised for the "3-months after" survey. 81% of respondents reported performance on at least the *Learn* level of the Performance Change Curve for all four of the targeted performance areas. 26 % moved to the *Learn* level or above in the CDM-related targeted performance; 24% moved to the *Learn* level or above in the area of working more effectively with cross-functional HR specialties. 13% moved to the *Learn* level or above in the area of reflecting on their work and implementing continuous improvement; 9% moved to the *Learn* level or above in the area of sharing their continuous improvement ideas with the organization and with their colleagues. These percentages are consistent with "moderate" growth. The data also suggests that the *Learn* level on the Performance Change Curve is a reasonable target for performance change in workshops of short duration.

Research Question 3: How much growth on the Performance Change Curve did learners experience in the three months following the workshop? 91% of respondents reported performance at the *Learn* level or above on the Performance Change Curve for all four of the targeted performance areas. 9% of respondents reported continued growth to at least the *Learn* level in the CDM-related targeted performance; 11% of respondents reported continued growth to at least the *Learn* level in the area of working more effectively with cross-functional HR specialties. 5% of respondents reported continued growth to at least the *Learn* level in the area of reflecting on their work and implementing continuous improvement; 6% of respondents reported continuing growth to at least the *Learn* level in the area of sharing their continuous improvement of ideas with the organization and with their colleagues. These results indicate that growth does extend beyond the completion date of the workshop. 72% of respondents reported performing on the *Practice* or *Apply* levels on the Performance Change Curve for all four areas of targeted performance change at the end of the three-month period. (This may reflect a narrowing of focus with regard to implementing the targeted performance change.)

Research Question 4: Is there a correlation between frequency of personal use of the CDM and learning level on the Performance Change Curve in CDM-related targeted performance over the three months following the workshop? .) Using the Correlation functions available in Microsoft Excel, the correlation between these two variables was .0.46 (not statistically significant at the P = < .05 level).

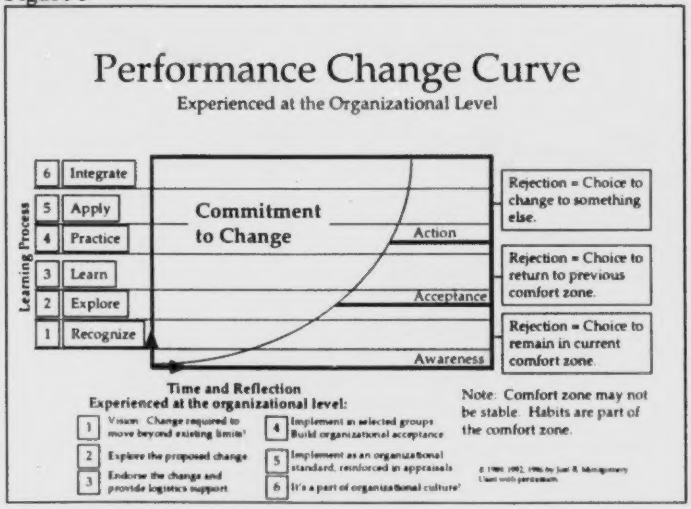
Research Question 5: What support activities have the learners experienced with regard to working with the CDM in the three months following the workshop? Possibilities included personal activities, organizational activities, and customer-focused activities. 96% of respondents reported being involved in one or more activities at the personal level (with 47.5% involved in only one activity). 80% of respondents reported being involved in one or more activities at the organizational level (with 58.4% involved in only one activity). 58% of respondents reported being involved in one or more customer-focused activities regarding the CDM (with 55.4% involved in only one activity). 69% of respondents indicated that their customers worked with the CDM in interactions with them at least monthly. Data regarding customer-support indicates that these activities have a lower priority than personal and organizational activities in understanding and working with the CDM.

The survey data indicates that learners who were actively involved in supporting their personal learning and in transferring knowledge to their internal customers also experienced growth along the Performance Change Curve for the targeted performance outcomes of the workshop. A follow-on survey is planned to ask respondents for the factors they experienced which inhibited growth along the Performance Change Curve.

Implications

This "3-months after" survey confirmed the results of the "7-days after" survey reported elsewhere (Montgomery, 1996e). The Performance Change Curve provided a reference point participants were able to use to benchmark their performance change. The electronic survey offered a collection approach learners were able to work with. Both the Performance Change Curve and this method of data collection and reporting, including both "7-days after" and "3-months after" surveys, are already being used to evaluate the effectiveness of other human resource development workshops at Andersen Consulting.

Figure 5


Performance Change Curve
Experienced at the Organizational Level
Learning Process
6 Integrate
5 Apply
4 Practice
3 Learn
2 Explore
1 Recognize
Commitment to Change
Action
Acceptance
Awareness
Rejection = Choice to change to something else.
Rejection = Choice to return to previous comfort zone.
Rejection = Choice to remain in current comfort zone.
Time and Reflection
Experienced at the organizational level:
1 Vision: Change required to move beyond existing limits'
2 Explore the proposed change
3 Endorse the change and provide logistics support
4 Implement in selected groups Build organizational acceptance
5 Implement as an organizational standard, reinforced in appraisals
6 It's a part of organizational culture'
Note: Comfort zone may not be stable. Habits are part of the comfort zone.
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Performance Change Curve at the Organizational Level The Performance Change Curve has implications at the organizational level (Montgomery, 1996a) (see Figure 5.) For the CDM-related performance change to become a part of firm culture, the organization needs to move through the learning levels on the curve. The need for this workshop indicated that AC is on the *Learn* level on the Performance Change Curve. More logistics support for implementing the CDM is required. The data regarding use by customers and the response to Research Question 5 indicate that support for this change is not uniform across the offices the participants were drawn from.

Organizations can work with the Performance Change Curve to evaluate their level of support and commitment to targeted performance change. Further research using the curve is needed to determine the usefulness of its details in tracking performance change at an organizational level.

The Performance Change Curve may also serve as a common benchmark for sponsors of human resource development programs to use to target performance change coming from human resource development programs. Participants in these programs and supervisors can use the same benchmark to identify the effectiveness of the programs and of the logistical measures in place to support performance change in the workplace.

How this Research Contributes to New Knowledge in HRD:

This research documents the effectiveness of a performance-focused human resources development workshop developed by and for Andersen Consulting's human resource professionals. This builds on the work introduced at the 1996 Conference of AHRD and documents the effectiveness of electronic surveys as a medium for data collection. The Performance Change Curve was used as a benchmark for self-report feedback by respondents to the survey and was adapted for use at the organizational level as well. These two versions of the Performance Change Curve represent innovations in thought in HRD literature. This study also builds on an earlier study (Montgomery, 1996e) to document the effectiveness of an Integrative Learning systems approach to designing human resource development programs.

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Examination of the Use of Scenarios as Learning and Decision-Making Tools for Human Resource Development

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This paper examines the theory and practice of scenario planning and suggests its potential value as a learning and decision making tool with application within the field of HRD.

Recognizing and managing the complexities of strategic change are difficult challenges for organizational decision makers. Human resource development (HRD) researchers and professionals are increasingly being called upon to participate in supporting and shaping organizational strategy (Torraco & Swanson, 1995). Scenario planning is a tool for systematically examining forces driving organizational change and for testing the assumptions, mental models, and choices of decision makers (Schwartz, 1991). The process of building scenarios usually begins with defining an area of strategic interest, then developing a set of plausible stories which identify major forces driving change, their interrelationships, and critical uncertainties (Wack, 1985a). These stories, or scenarios, are then used by decision makers to rehearse and improve their strategic thinking. Although scenario planning is a well-established strategic management tool closely associated with managing organizational change (de Geus, 1988; Drucker, 1986; Georgantzas & Acar, 1995; van der Heijden, 1996; Wack, 1985a; Wack, 1985b), it has received only limited attention within the HRD literature.

Research Question

What is scenario planning, and what is its value as a learning and decision-making tool for human resource development?

Methodology

This study consisted of the collection, analysis, and synthesis of information from four sources: 1) a search of the literature on scenario planning research and practice, 2) discussions of scenario planning with expert practitioners, 3) participation in scenario planning workshops and related presentations, and 4) discussions of scenario planning with HRD scholars.

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Description of Scenario Planning

This section of the report organizes the results of our research on the nature of scenario planning around six questions: (a) What is scenario planning? (b) How are scenarios developed? (c) What is the history of scenario planning? (d) What is the value of scenario planning as a learning tool? (e) What is the value of scenario planning as a decision-making tool? and (f) In what areas of professional activity has scenario planning been applied?.

What is Scenario Planning? As more organizations face continuous change as the order of the day, organizational professionals have developed expertise and tools to operate successfully in such an environment. The traditional tools of strategic planning, which are commonly extrapolations of the past to determine the future, are not effective when future forces do not mirror past forces (Mintzberg, 1994). In an environment of constant change and challenge, what Vaill (1989) refers to as permanent whitewater, non-traditional tools for planning for and responding to change are needed. Scenario planning has been developed as such a tool.

A *scenario*--literally the script for a play--is "a tool for ordering one's perceptions about alternative future environments in which decisions might be played out" (Schwartz, 1991, p. 4). The process of scenario planning generally involves development of three or four plots and associated narratives illustrating major forces driving change within a system, the interrelationships of these driving forces, and critical uncertainties in the environment (Wack, 1985a). Scenarios are designed to help decision makers structure and think about uncertainty, test their assumptions about how critical driving forces will interact, and reorganize their mental model of reality (Wack, 1985b).

Processes of scenario development and presentation are often described in both the practitioner and research literatures in qualitative terms. For example, Schwartz (1991) describes the process as an art rather than a science. Qualitative descriptions of the process of scenario planning contain several common themes. The first is the role of scenarios play in helping to prepare people and organizations for change. The uncertainty of change can produce strong anxiety, resulting in denial and a decline in the quality of decision making. Scenarios provide safe and often engaging opportunities to explore the implications of uncertainty and to rehearse effective ways of responding to it. Scenarios thus enable individuals and organizations to act in confidence, with greater knowledge of uncertainty (Schwartz, 1991; van der Heijden, 1995)..

A second theme is the ability of scenarios to help people cope with the complexity of change through the use of plots and story lines. By organizing complex information on future trends and possibilities into a series of plausible stories, scenarios are seen as interpretive tools which create meaning and thereby guide action. Scenarios are often adopted by organization members as a common language and conceptual framework for discussion strategy and change. Van der Heijden (1996) characterizes this as both an individual and an organizational learning process.

A third qualitative theme found in descriptions of scenario planning involves the use of multiple plausible scenarios to help decision makers think more broadly and flexibly about change, adopting multiple perspectives as they seek to understand future events.

According to Wack (1985a), scenarios offer two main benefits to organizations: entrepreneurial, i.e., discovering strategic options which were not previously considered (for example, see Kahane (1992)), and protective, i.e., anticipating and understanding sources of risk and uncertainty within systems (for example, Clemons, 1995).

How are Scenarios Developed? Preparation of a set of scenarios involves first analysis, and then synthesis of information. In the analysis phase, the underlying structure and dynamics of forces driving change are identified. Typically, a distinction is made between two types of driving forces: (a) those which are predetermined, and (b) those which are uncertain. Predetermined forces can be identified through research and can be reasonably predicted. For example, demographic information can be used to estimate the characteristics of markets and populations at future points in time. Predetermined forces are used to establish the limits or boundaries of possible future conditions considered within a set of scenarios.

Uncertainties are future conditions which cannot be predicted, but which can be analyzed to identify important dimensions along which these uncertainties will be vary. These dimensions are then used in understanding the dynamics of possible future changes, and in designing alternative plots for a set of scenarios describing these possible futures. For example, Kleiner (1994) describes the development of a set of scenarios concerning the future of global information networks. The characteristics of such future networks could not be directly predicted. However, research indicated that the availability of capital for creating such networks would be a key factor in determining how they developed. This led to the design of two alternate scenarios. The first assumed that investment capital would be scarce, and therefore only large resource-rich organizations would be able invest in and use such networks. The second scenario assumed that capital would be more freely available from a variety of sources, and that such networks would proliferate widely and independently of formal organizations. In this way, although the future of such information networks could not be predicted, two contrasting possible future states were identified and incorporated into a pair of scenarios.

Information compiled during the analysis phase of scenario planning is then synthesized into a range of plot lines, and then detailed narratives describing possible alternative organizational futures are written for each scenario. Meetings are held with organizational decision makers, during which they discuss and respond to each of the hypothetical, but possible, futures described in the set of scenarios. The discussion is characterized as (a) testing decision makers' conceptual models of the organization and its environment, (b) developing shared understandings within the group of how the organization's environment may change, and (c) identifying the implications of this range of possible changes.

Descriptions of the scenario development process differ in the steps they list. Schwartz (1991) describes eight steps. Schoemaker (1995) includes ten. One group of expert practitioners (The Centre for Innovative Leadership, 1995) identifies the following six elements. This list provides a good overview of the scope of the process. Other descriptions divide the process into more detailed steps.

1. Identification of a strategic organizational agenda, including assumptions and concerns about current strategic thinking and vision.
2. Challenging of existing assumptions of organizational decision makers by questioning current mental models about the external environment.
3. Systematically examining the organization's external environment to improve understanding the of structure of the key forces driving change.
4. Synthesis of information about possible future events into three or four alternative plots or story lines about possible futures.
5. Development of narratives around the story lines to make the stories relevant and compelling to decision makers.
6. Use of the stories to help decision makers "re-view" their strategic thinking.

What is the History of Scenario Planning? Scenarios have a 25 year history of application in strategic business planning. According to Georgantzas and Acar (1995), the concept of scenarios was introduced into planning by Herman Kahn through his work with RAND Corporation in the 1950s. The concept was originally used in studies of military strategy for the US government, and has its roots in operations research conducted by the British during World War II. In the 1960s and early 1970s scenarios emerged as an organizational planning tool. Early applications were made in England by Royal Dutch Shell's strategic planning department (de Geus, 1988; Kleiner, 1996; Wack, 1985a; Wack, 1985b), and in France by urban and geographical planners (Godet, 1987; Ozbekhan, 1977).

Early scenario work was associated with the specific disciplines of operations research and strategic management. During the 1970s these distinct methods began to be synthesized into a multi-disciplinary approach incorporating the perspectives of professional planners, analysts, and managers. In the past two decades scenario planning and analysis have become increasingly popular as labels for the work of practitioners and researchers. Some observers now see it emerging as a distinct field of study (Huss & Honton, 1987).

What is the Value of Scenario Planning as a Learning Tool? The literature on scenario planning contains numerous descriptions of its value as a tool for both individual and organizational learning. Although originally developed as a tool for strategic decision making, scenario planning is increasingly characterized as an important learning tool (de Geus, 1988; Georgantzas & Acar, 1995; Kleiner, 1994, 1996; Schwartz, 1991; The Centre for Innovative Leadership, 1995; van der Heijden, 1995; Wack, 1985a, 1985b). Some authors characterize organizational decision making itself as an explicit learning process. The quality of organizational decisions is then seen as dependent on a process of learning (de Geus, 1988).

Individual Learning Reported benefits for individual learners include (a) a deeper understanding of the forces and dynamics of one's organizational environment, (b) an understanding of how possible future environments may require personal change, (c) a greater sense of confidence in dealing with the uncertainties of the future, (d) greater emotional readiness for change, and (e) improved quality of individual strategic thinking and personal decision making.

Organizational Learning Senge and Sterman (1992), in discussing criteria for the evaluation of organizational learning tools, identify three stages of an effective organizational learning process:

> Mapping mental models--explicating and structuring assumptions via systems models.
> Challenging mental models--revealing inconsistencies in assumptions.
> Improving mental models--continually expanding and testing mental models. (p. 140)

Georgantzas and Acar (1995) apply these criteria in their evaluation of a specific example of scenario planning. They conclude that all three criteria were fulfilled by the scenario planning process.

Senge, Kleiner, Roberts, Ross and Smith (1994) describe scenario planning as an important innovation in organizational learning. They characterize it as a tool for inquiry and reflection around mental models, and characterize it as an example of the action science methods of organizational learning described by Argyris and Schön (1978).

What is the Value of Scenario Planning as a Decision Making Tool? Schoemaker (1995) summarizes the advantages of scenario planning as a tool for strategic decision making by contrasting it with three alternative approaches: contingency planning, sensitivity analysis, and computer simulations. According to Schoemaker, contingency planning examines only one uncertainty (a base case and exceptions), while scenarios explore the interactions of multiple uncertainties in several combinations. Similarly, sensitivity analysis examines the effect of a change in one variable with others kept constant. This is useful for investigating the effect of small changes. Scenarios change several variables at once and explore the resulting interactions. In this way, scenarios "try to capture the new states that will develop after major shocks or deviations in key variables" (p. 27). In contrast to the objective output of a complex computer simulation, scenarios attempt to interpret and give meaning to the output, identifying new patterns which emerge. Scenarios go beyond objective analysis, often including qualitative elements of change that cannot be quantitatively modeled, such as changes in social values and in legal regulations.

In their recent comprehensive appraisal of scenario planning, Georgantzas and Acar (1995) trace the development of scenario planning methods from early, poorly structured approaches such as that of futurists Kahn & Wiener (1967), to recent and more rigorous techniques which follow structured methods for identifying scenario elements and assembling them into sets of assumptions to form scenarios. Citing Millet and Randles (1986), Georgantzas and Acar list three advantages of modern scenarios as planning and decision -making tools:

> 1. They can be rigorous, systematic, and factual.
> 2. They need modest amounts of time and resources. (Scenarios demand more data and calculations than purely subjective models, but less than statistical and econometric models.)
> 3. They can provide a direct link between the external environment and corporate strategy by allowing strategy makers to formulate, debate, and appraise their company's situation in its competitive and regulatory environments. (p. 262)

In What Areas has Scenario Planning been Applied? Business applications of scenario planning focus on three levels: the macroeconomic and environmental level (e.g., an entire industry), the competitive strategy level (e.g., portfolio analysis), and the operations level (e.g., product development) (Georgantzas & Acar, 1995). Scenario planning tools have been applied to a range of professional, organizational, and national issues. For example, in addition to its frequent use in business and industry, scenario planning has been applied in the fields of education (Habana, 1993; Ogilvy, 1993), health care (Venable, Li, Ginter & Duncan, 1993; Zentner & Gelb, 1991), and public policy and administration (Bonnet & Olson, 1994; Rosell, 1995; Zentner & Gelb, 1991). Scenario planning has recently been used in the planning of reengineering projects (Clemons, 1995), and to study the future of the profession of training and development (Plott & Humphrey, 1996). In this last application, the American Society for Training and Development's Council of Governors participated in scenario-based planning to define some of the premises behind likely changes in the workplace, and the implications of these changes for the profession of training and development. The initial report of this work included a summary of important trends affecting the future of the profession (Bassai, Benson & Cheney, 1996).

Scenario Planning and HRD

Review of the concepts, history, and practice of scenario planning has shown that it is currently used in change management and learning applications with organizations, groups, and individuals. Recent scholarly work on scenario planning has framed it within theories of individual and organizational learning and development (van der Heijden, 1996). Expert practitioners see it as an effective tool for managing change in organizations (The Centre for Innovative Leadership, 1995). A specific HRD application of scenario planning has been its use as a key part of the organizational analysis associated with planning and managing large-system change (van der Heijden, 1996).

Although our literature search found few references to the use of scenarios within HRD, descriptions of scenario planning in the management and planning literature, as described above, characterize it as a participative and transformational learning process, with potential for both active and reflective learning.

We believe scenario planning may have potential within the field of HRD, and should be evaluated as a tool for individual, group, and organizational learning and decision making. At the same time, broader attention from the HRD profession has the potential to advance the theory and practice of scenario planning. Specifically, application of HRD techniques of instructional design and evaluation could provide valuable information on the reliability and validity of the claims of learning and performance improvement found in the scenario planning literature. There is a clear need for concepts and techniques of evaluation within the practice of scenario planning. None of the descriptions of scenario development and presentation practices that we found includes an evaluation component. With the exception of one brief report (Schoemaker, 1995) of an empirical investigation of changes in scenario participants' subjective estimates of the probabilities of possible future events, we found no examples of formal evaluation of scenario planning.

Finally, the recent report (Plott & Humphrey, 1996) of the use of scenario planning to anticipate future trends within the field of training and development suggests that scenario planning may be of value to decision makers in a rapidly emerging profession such as HRD.

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The Alignment of Corporate Strategy and Training: A Survey of Trainees and Managers

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This paper reports the findings of a study that explored the relationship between the variables called "presence of practices to support transfer of training" and the "perception of trainees and managers of the alignment of training with the strategic direction of the organization" in a targeted training program of a Fortune 200 company, in Michigan. A low-to-moderate positive correlation between these two variables was found. Its implications are discussed.

The researcher wanted to know whether trainees and their immediate supervisors engaged in transfer-enhancing behaviors (before, during, and after training), depending upon their perception of the alignment of training with the strategic goal of the organization. A secondary purpose of this study was to investigate the relationship between awareness of and commitment to the strategic direction of the organization among trainees and their managers. The subjects of the study were 147 sales representatives and 36 field managers (96% of the targeted sample size). The study consisted of a survey and three follow-up discussions with 30 trainees that took place during the fall of 1993 and winter 1994.

The Problem

Several sources suggest a low return of the investment in the multimillion-dollar training industry in the USA. In 1992, Broad and Newstrom estimated an average expenditure, across the entire workforce, of more than $400 per employee per year in training and development activities. Baldwin and Ford (1988) had previously estimated that not more than 10% of these expenditures [typically] result in transfer to the job. The researcher suspected that the weak linkage training site-work environment revealed in the literature about transfer of training (Montesino, 1995; Montesino, 1996) might be at the heart of the low transfer of training problems perceived by many business leaders. For that reason, several scholars and practitioners (Broad & Newstrom, 1992; Brinkerhoff & Gill, 1994; Huczynski & Lewis, 1980; Zemke & Gunkler, 1985) call for a more active role of the key training players (that is, trainers, trainees, and immediate supervisors) in bridging the gap between training and job performance by managing the transfer of training process, beyond the emphasis given thus far to the instructional design and delivery aspects of training.

On the other hand, few studies have been aimed at inquiring into the critical linkage of training with the strategic goal of the organization; in spite of the growing concern about this issue in the training and development community. Some of the few studies in this area include: Carnevale, Gainer & Villet (1990); Casner-Lotto & Associates (1988; Rosow & Zager (1988); and Training Strategies, Inc. (1992).

Training Strategies' study (1992) helped to visualize two different scenarios in regard to training and corporate strategy: a) the organization that integrates training into the strategic business planning and implementation processes (scenario 1), and b) the organization that marginally inserts the training function into these processes (scenario 2). In scenario 1, the corporate mission and HRD mission are identical. HRD plans are constructed in the same context and by the same process as the business plan, and are viewed in direct relationship to it. In this type of organizations, trainers are policy-creators rather than policy-followers. Leadership from the CEO provides tremendous leverage for integrating training with strategic goals. The HRD director sits at the strategic planning table and is an active participant in

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formulating corporate strategies, directly influencing strategic decisions from the outset. From the involvement of the HRD Director, training plan drivers are derived. These training plan drivers act as linkages with business activities. These plan drivers guide the focus of training and the needs analysis process and establish parameters to evaluate the value added from training and the return on investment. In scenario 1, each single training activity is connected, through a strategic map, to the strategic business goals. The training progress is reviewed in achieving the business plan, with strategic partnerships developing between trainers and line management.

Scenario 2 shows less developed linkages between training and corporate strategy. Here, corporate strategy is formulated by a small, select group of top officers. It is then transmitted to lower levels in the organization in diminishing communication that reduces the ability to translate strategy into training needs. In this scenario, the training plan, if any, and the business plan do not stem from the same process. They are viewed in isolation and usually are short-term and schedule-driven. The result is that the training plan remains at operational level. In scenario 2, the HRD function acts as an observer of the strategic planning process, without involvement in key decisions. It acts as a consulting entity and receives strategic clues indirectly, usually at the implementation stage--too late to impact these key decisions. The HRD unit is viewed as a firefighting, program-maintenance entity, that responds to line managers' requests. The HRD staff has to rely on several survival strategies to receive strategic clues and to become involved in the strategic planning process, playing the double role of trainer and in-house lobbyist to advocate in favor of training.

Previous to this investigation, little was known about the two main variables of the present study (practices to support transfer of training and alignment of training with the strategic direction of the organization) considered together.

The Variables

The variables investigated in this study were: a) perceived presence of practices to support transfer of training, b) perceived alignment of training with the strategic direction of the organization, c) perceived awareness of the strategic direction of the organization, d) commitment to the strategic direction of the organization, and e) self-reported transfer of training . Variables a), b), c) and d) were operationalized by building four composite indexes with several questionnaire items.

Variable a) was defined by a list of well-supported, research-and-best-practice-based synthesis of transfer enhancing behaviors that have been singled out from the literature review and suggested from field experts. The questionnaire was organized so that 16 different practices were assigned to the trainer, 13 to the trainees, and 12 to the managers. The subjects were asked to identify the extent to which each practice was in place before, during, and after the training program they participated in.

Variable b) was defined by 5 questions in the survey. Variables c) and d) were defined by two survey questions each. Variable e) consisted of a scaled-question used by Brinkerhoff & Montesino (1993) in another study. In that question, the subjects self-reported their perception of the transfer of training that took place after the training program was over.

Hypotheses

Four hypotheses were tested in this study. Based on the review of the available literature, the researcher advanced that:

1) there would be a positive relationship between the perceived presence of practices to support transfer of training and the perceptions of trainees and managers of the alignment of the training program with the strategic direction of the organization. That is, the correlation coefficient between the two variables would be higher than zero.

2) there would be a relationship between the variable "reported transfer of training" and the variable "perceived alignment of training with the strategic direction of the organization", so that the subjects may have reported more or less transfer of training taking place depending upon their perception of the alignment of the training program with the strategic direction of the organization. That is, there would be a significant difference between the two groups in the mean (or mean rank).

3) there would be a relationship between the variable "reported transfer of training" and the variable "perceived presence of practices to support transfer of training", so that the subjects that reported very-high transfer of training may also have engaged themselves in more transfer enhancing behavior, and vice versa. That is, there would be a significant difference between the two groups in the mean (or mean rank).

4) there would be a positive relationship between the variables "perceived awareness of the strategic direction of the organization" and "commitment to the strategic direction of the organization." That is, the correlation coefficient between the two variables would be higher than zero.

Statistical Procedures

An investigator-developed questionnaire was used to measure the variables. A pilot test took place previous to the administration of the survey. Its validity was established by an expert panel and a quantitative technique for content validation (Biner, 1993). The reliability was established through the use of the Cronbach's alpha coefficient (Cronbach, 1951). The composite indexes that quantitatively defined variables a), b), c), and d) obtained standardized alpha reliability coefficients of 0.88, 0.71, 0.88, and 0.96 respectively. Since the internal consistency for this self-reported instrument is considered adequate (based on the Cronbach alpha coefficients mentioned above), the reliability of the measures for the four variables was sufficiently established. Parametric and non-parametric techniques were used to test the hypotheses for trainees and field managers at 0.05 level.

Hypothesis 1) was tested by computing a Spearman rank-order correlation coefficient between the variables for trainees (result = 0.29); and a Pearson product-moment correlation coefficient for field managers (result = 0.38). Conclusion: based on these tests, there is sufficient evidence to support the hypothesis for both trainees and field managers.

Hypothesis 2) was tested by computing two Mann-Whitney U tests for trainees (result = U value of 1866.0) and field managers (result = U value of 83.0). Conclusion: support for the hypothesis in the case of the trainees, and insufficient support in the case of field managers.

Hypothesis 3) was tested by computing a t-test for independent means for trainees (result = t-value of 3.99) and a Mann-Whitney U test for field managers (result = U value of 90.5). Conclusion: sufficient support for the hypothesis in the case of trainees, and insufficient support from part of the field managers.

Hypothesis 4) was tested by computing a Spearman rank-order correlation coefficient between the two variables for trainees (result = 0.26), and a Pearson product-moment correlation coefficient for field managers (result = 0.63). Conclusion: sufficient support for the hypothesis for both trainees and field managers.

Interpretation of the Findings

This study found a low-to-moderate positive correlation between the "perceived alignment of training with the strategic direction of the organization" and the "presence of practices to support transfer of training" for both trainees and managers. In other words, it was found that the trainees and their immediate supervisors actually engaged themselves in more or less transfer-enhancing behaviors (before, during, and after training), depending upon their perception of the alignment of training with the strategic goal of the organization.

The group of trainees that self-reported very-high transfer of training perceived significantly higher alignment of the training program with the strategic direction of the organization than the group of trainees that self-reported low-to-high transfer of training. Field managers did not differ significantly in this variable. Trainees who self-reported very-high transfer of training also reported significantly higher presence of practices to support transfer throughout the training program than the group of trainees that self-reported low-to-high transfer of training. Field managers did not differ significantly in this variable either.

A positive correlation was found between "perceived awareness of" and "commitment to" the strategic direction of the organization. This finding reveals that those trainees and their managers who self-reported higher awareness of the strategic direction of the organization, were also more committed to that strategic direction than those trainees and managers that reported lower levels of awareness.

Implications of the Study

The findings of this study suggest that the higher the alignment of the training program with the organization strategy, the higher the likelihood that key training constituencies will engage themselves in transfer-enhancing behaviors, and, consequently, the higher the likelihood of transferring training to the job. A significant portion of the subjects in this study saw more value from training, perceived that they transferred more training to the job, and engaged in more transfer-enhancing behaviors as they saw more alignment of the training program with the strategic direction of the organization. This study also confirmed the findings of several scholars (Broad & Newstrom, 1992; Brinkerhoff & Montesino, 1995; Brinkerhoff & Gill, 1994; Georgenson, 1982; Huczynski & Lewis, 1980; Michalak, 1981; Zemke & Gunkler, 1986) that stress the great need for building support systems for training by building partnerships among trainers, trainees, and managers to encourage transfer of training.

The results of this study have program-wide and organization-wide implications, as well as implications for the field of human resource development. This study contributes to the understanding of crucial training concerns: a) the way corporate strategy and training usage relate to each other, as important elements of a training paradigm more responsive to individual needs and more accountable for organizational pay off; b) the importance of mapping each individual training activity to the organizational goals; c) the need to create support systems for training; and d) the importance of informing organizational members about the strategic direction as a way of eliciting commitment to it.

These findings add to the body of knowledge on how training and corporate strategy should relate to each other and suggest a further researchable relationship between the support for transfer and the alignment of training with the strategic direction of the organization. Further research in different training settings and incorporating several other variables is highly recommended due to the limited generalizability of this study beyond the organization where it was conducted, its reliance on self-reported perceptions from trainees and their managers, and the retrospective nature of the survey.

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Strategic Human Resource Development: A Conceptual Exploration

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A exploration of the concept of "strategic human resource development" shows it to be functionally important, yet difficult to define. Four models of SHRD are presented and contextualised, leading to a situated and expanded view of SHRD. Given that the organisational world is increasingly adopting views propounded by SHRD theorists, further attention to strengthening the conceptual base of HRD would help legitimate SHRD as an academic discipline.

Since the Second World War the nature of "management," both as an idea and a profession, has undergone a variety of changes, generally as a reaction to prevailing social and economic challenges. Similarly, the nature and focus of human resource development (HRD) has changed in reaction to the changing face of 'management'. However, there is a cyclic progression here, in that HRD, of itself, effects the nature of management and 'managing', which in turn has a direct effect upon the nature and viability of industry, and hence the nation's economic performance. To date, much of the long term effect associated with HRD has occurred in an uninformed manner, based upon the reactive cycle described above (Stead & Lee, 1996). The first part of this paper, therefore, attempts to map (briefly) the changing nature of 'management', and HRD, in order to build a base for an exploration of strategic HRD (SHRD).

In 1987 two influential reports were published in the UK (Handy, 1987; Constable & McCormick, 1987). They noted that British managers appeared to have received far less training and education than their major industrial competitors. Both reports proposed a significant expansion of provision intended both to enable existing managers to 'catch up' and to train potential new entrants. This led to the creation of the Management Charter Initiative (MCI) which brought together government, employers and education establishments in proposing various national solutions to the problem. One of the main difficulties has been in first addressing what 'management' and the nature of managerial work really are, and thus what is 'really' involved in the education, training and/or development of managers, prior to then agreeing upon the best ways of facilitating this. The differences between how the role of the manager is viewed, and hence, how it might best be facilitated, equate with different social and historical approaches to management. Overall, as can be seen in Figure 1, there are four main views of 'management': the classical, scientific, processual and phenomenological.

Classical Management. The classical view of management is derived from experience of good practice in large organisations, particularly in the latter part of the last century. Notions of hierarchy, recruitment and promotion, regulations and unitary chains of command come from military organisations; span of control, clarity of procedures, and budgets for resource allocation come from administrative organisations. Admittedly there are differences in emphasis between different countries according to the peculiarities of their systems: the Germans may think of the Prussian army; the French of the Ministries set up by Napoleon; and the British of the Indian Civil Service. Nevertheless the principles outlined by early writers such as Henri Fayol (1916) are readily transferable into the experience of most countries.

Managers, within the classical view, must be able to create appropriate rules and procedures for others to follow, they must be good judges of people and able to take independent action as and when required. Management Development is strongly focused on HRM and is a matter of selecting the 'right' people with leadership potential (normally those from the upper strata of society); ensuring that they are fully conversant with past experience and current practice, and that they are committed both to their calling and to the organisations in which they will subsequently work. This is clearly evident in the curriculum of business schools in the USA and France in the

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first half of this century, where there was much emphasis on the teaching of good practice through the use of cases as exemplars (Barsoux, 1989). The most influential stakeholders in the provision of this form of management development are the organisations themselves. They have an interest in the progression of their staff within their organisation, and are not necessarily too concerned about the lack of external qualifications if the person is 'right' for the job. To a certain extent, externally accepted qualifications are seen as an inducement to job mobility and hence organisational instability.

Views of Management	*Classical*	*Scientific*	*Processual*	*Phenomenological*
Characteristics	Large Organisations, Hierarchy, recruitment, promotion, regulation etc.	Management as a science, logical analysis, solutions and 'right' answers, economic criteria	Management as an art, experience, learning to learn, raising questions, accept emotionality	'Management' as part of social structures, lack of causality - unpredictability.
Barriers to entry.	Elitist (class) barriers	Lack of specific qualifications	Lack of personal qualities	Wrong place or wrong time.
Stakeholders	Organisation	Business Schools	Mainly Individual	Multiple
Views of Human Resource				
	Selection, leadership ,find the 'right' person. - traditional HRM	Training, quantitative, problem solution, uni-disciplinary. - traditional HRD	Education and focused Development qualitative, interpersonal skills, etc., multi-disciplinary.	Emergent Development Integrated, holistic, arising systemically, multi-cultural.
Examples	Teaching of 'best practice'	Objective criteria, Specialist qualifications	Total Quality Management Business Process Re-engineering	Social systems, Action Learning, Life long learning

Figure 1. Views of management and HRD.

Scientific Management. The scientific view was fostered by the enormous progress that had been made in the application of operations research and logistics during the Second World War. This view is predicated upon the idea that human behaviour is rational, and that people are motivated by economic criteria (Taylor, 1947), and suggests that correct decisions and courses of action can be derived through mathematical analysis, and that there is a logical solution to questions of organisational design and operation. This was the basis for the revolution in management education in the USA, that was sparked off by the Gordon and Howell report (1959) which emphasised the need for scientific selection of students, and the selection of faculty according to their academic qualifications rather than their management experience. Management scientists now needed to be well trained in quantitative techniques, and managerial competence could be acquired by anyone irrespective of social origins. If anything, managerial experience was a thing to be eschewed because it represented 'unscientific' practice. This might still be reflected in the way US business schools continue to be reticent about establishing relationships that are too close to industry (Rehder et al, 1991).

The dominance of this view coincided with the rapid development of functional disciplines and departments (such as Marketing, Operations Research and Finance) in Business schools on both sides of the Atlantic, and was mirrored in the establishment of 'training departments' in organisations whose remit was to identify and fill the *'training gap'* through scientific methods of analysis. Training was a subsidiary, low prestige, and mechanical function. The most influential stakeholders in the provision of management development were the management schools with their focus upon hierarchical qualifications, the 'professionalisation' of management, and distinct knowledge-based areas of expertise. Scientific views of management are still highly influential, despite disillusionment amongst leading management scientists (Ackoff, 1979; Simpson, 1978), along with the spectacular failure of some 'projects' which relied heavily on management science

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techniques. Indeed, some claim that it is the over reliance on rationalistic methods such as PPBS which led to American defeat in the Vietnam war (Locke, 1989).

Processual Management. A balance to this is provided by the processual view of management. As early as the 1920s, Elton Mayo and colleagues had realised, through a series of studies at the Hawthorne Works of the General Electric Company, that individuals are significantly influenced by groups and the social context in which they are working (Mayo, 1933). Herzberg et al. (1959) showed that people are less motivated by economic rationality than by being given recognition and responsibility; and Mintzberg (1973) demonstrated that analytic techniques were of limited relevance to the *real* work of managers. The phenomenal economic success of Japan in the late 1970's led to the suggestion (Ouchi, 1982; Peters and Waterman, 1982) that Western managers should try to reproduce some of the cultural conditions that made this so leading to a focus upon Total Quality Management (TQM) and attempts to *'create'* the Learning Organisation. Each of these movements suggests economic advantage will come to those who are best able to manage the interpersonal processes - to spot opportunities, to learn rapidly, and to create appropriate commitment amongst colleagues.

Human resource development plays an important part in the processual view of management - current and future managers are helped to develop leadership and interpersonal skills, creativity, self reliance and the ability to work in different cultures. As with the scientific model these are all attributes that can (ideally) be developed regardless of social origin. Although the individual is the main stakeholder in his or her own development, the direction of the organisation (and thus of an individual's development) remains at the behest of senior management who, through initiatives such as Business Process Re-engineering (BPR), are believed to mould the organisation and the people within it.

Phenomenological Management. This view of management is associated with the notion of multi-disciplinary flexible pathways of development and life long learning that benefit all the stakeholders, whose togetherness can be seen as an 'organisation' that is able to adapt and change in response to a changing environment. From this perspective, however, the boundaries between individual and 'organisation' are blurred (the organisation becomes disembodied and can only be talked of as a unitary phenomenon under particular circumstances). The nature of management is that of being part of a system whose activities change as a function of the system and of its relationship to its environment. All individuals are seen to collude with their situation and, through that collusion, are 'together' responsible for the running and development of the organisation (despite some being 'senior management' and others from the shop floor).

The development of one individual helps the development of the whole, but such development is emergent, by which is meant that there is no clear end point or targets for such development (Lee 1997). This view of management removes the distinction between 'management' and 'HRD' and embraces alternative organisational structures (such as creative partnerships, self managed teams etc.) more easily than do the other views. In addition, because the phenomenological view eschews ideas of (real) control by a hierarchy, as well as questioning the ability of the organisation to (really) predict or plan, this approach is more in tune with work that questions the serial and causal nature of our existence (Stacey, 1993; Lee & Flatau, 1996). Each of these interpretations of 'management' is problematic and some of these 'problems' will be discussed later in this paper, however, having laid out four different ways of viewing management (and people) I shall build further upon this base, before critiquing the whole.

Strategy and HRD

The Watson Report (1994) pulled together the findings of two major UK research projects. The Cannon Working Party looked at the state of UK and analysed developments since the Handy and Constable Reports. Despite some general reservations, they found rapid growth in virtually all forms of management development provision, and changes in attitude among senior managers and organisations, such that successful organisations appeared increasingly aware of the link between the quality of management (and its development) and overall performance.

The Taylor Working Party looked towards the millennium, and the main pressures likely to affect business and training needs - as identified by corporate opinion makers and organisations. Key findings of importance here are the anticipated changes in organisational structure (contracting out, delayering,) and changes in the nature of management (flexible, mobile, portfolio working) and of development (individuals taking responsibility for their own life long development). These were tied to the need for greater *empowerment*, and 'Strategic thinking was ranked as ***the*** priority skill for the future'(Key finding 4). Taylor then identified six challenges which he addressed in the remainder of the report (Figure 2).

1. Organisations, both large and small, need to be educated to recognise that investment in management development contributes directly to long-term competitiveness.
2. Managers must commit themselves to life-long learning.
3. Senior managers must provide commitment and leadership.
4. Standards and qualifications must be transferable and widely acceptable.
5. Providers must recognise and respond to the diverse training and development needs of users.
6. A more coherent infrastructure for management development must be created.

Figure 2. Taylor's (1994) Six Challenges

Each of these challenges places HRD centre-stage as a strategic influence in organisational and national development. In addition, the importance placed upon empowerment and strategic thinking represents a shift from previous analyses. The future of the nation is now seen to be linked to the personal qualities and thought styles of all individuals (not just corporate leaders).

1. No Systematic HRD Development.
2. Isolated Tactical HRD.
3. Integrated and Coordinated Structural and Development Tactics.
4. An HRD Strategy to Implement Corporate Policy.
5. HRD Strategy Input to Corporate Policy Formation.
6. Strategic Development of Management of Corporate Policy.

Figure 3. Levels of SHRD, after Pedlar et. al.

Rhetorics of 'empowerment' 'strategy' 'learning' and 'development' have become important catch-phrases for organisations and the training function, however, they are not unitary or well defined concepts (Lee, 1997). Rhetoric has become the panacea of the 'Nineties, and these words are often used as if talking about them can magically transform any organisation, whatever its size, structure, environment or culture, *into 'the organisation of the future'*. As Stacey (1993) argues, conventional wisdom gives HRD an important role in supporting an organisations strategy, not only because it motivates people, but also because it provides the skills required for strategy implementation (Hussey, 1991). Pedlar et. al. (1990) outline levels in the development of SHRD (Figure 3), such that a 'Learning Organisation' would be one in which HRD enhances the nature and quality of the corporate policy-forming processes. This model of 'levels' however, assumes that the organisation is a large bureaucracy in which any action can only be described as strategic in so far as it is explicitly linked to the implementation of pre-defined policy; in which corporate policy is decided by senior management, and in which HRD is a sub-function alongside HRM. Whilst such levels might be apparent in that circumstance, there are many forms of 'organisation' and perhaps a more detailed examination of the relationship between SHRD and organisational development is required. For example, in contrast to conventional wisdom (which assumes that organisations are active participants in predictable environments) it can be argued that the majority of organisations are reactive participants in unpredictable environments (hence the popularity of consultancy - as it provides outside information that facilitates effective reactive behaviour). In addition, some organisations are passive within a predictable environment (they know what is going on but don't want to change), and others are active within unpredictable environments (such as in Mintzberg's adhocracy) in which organisations are continually looking for more information and developing coping strategies in anticipation of changing situations. The configuration of the organisation (i.e. Miller, 1986), therefore, is likely to be contingent upon its interpretation of, and its reaction to, its environmental

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circumstances (i.e. Child, 1984). The different views of management and HRD explored above entail different views of organisational development as well as of the nature of 'strategy' and of 'strategic thinking'.

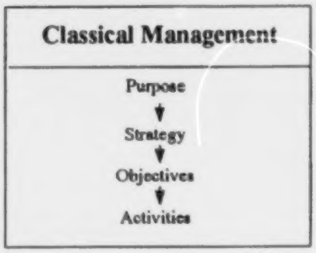
Classical Management
Purpose
Strategy
Objectives
Activities

Figure 4.

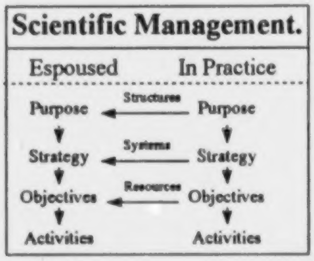
Scientific Management.
Espoused
In Practice
Structures
Purpose
Purpose
Systems
Strategy
Strategy
Resources
Objectives
Objectives
Activities
Activities

Figure 5

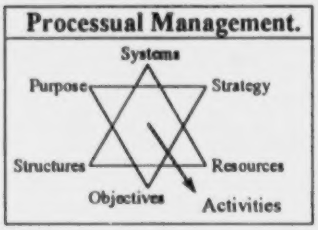
Processual Management.
Systems
Purpose
Strategy
Structures
Resources
Objectives
Activities

Figure 6.

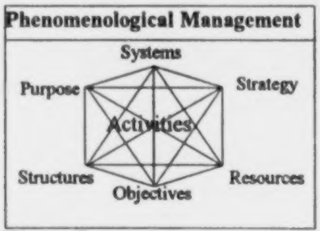
Phenomenological Management
Systems
Purpose
Strategy
Activities
Structures
Resources
Objectives

Figure 7.

Organisational Development & SHRD

In the ***Classical view*** of management (Figure 4) there is little need for the organisation to 'develop'. Strategic thinking is a concrete activity that helps align the organisation's activities to its pre-determined purpose in an environment that is seen to be predictable and controllable. These strategic thoughts (tactics) are then passed on to those who enact them. The role of HRD is to ensure that all members of the organisation have the knowledge and skills necessary for the completion of their tasks.

The ***Scientific view*** of management assumes the need for structured and planned organisational development (Figure 5). This view is the one that is traditionally addressed by 'strategic management'. In other words it comprises the heart of the 'MBA' and Porter'istic (1985) views of context analysis and differentiation into market segments. The role of HRD is as a form of 'social engineering', operating as a function within the organisation in order to coalesce divergent views in accordance with the purpose (mission) and objectives established by the hierarchy. In this view, SHRD might be said to occur if the HRD function plays a deliberate role advising how the corporate policy might best be supported (as shown in Figure 3), and strategic thinking is the prerogative of those in charge.

Processual Management (Figure 6) moves away from this by suggesting that the internal processes, as well as the 'individuals', need to be 'engineered' such that the desired activities (as defined by the hierarchy) are enhanced. In stepping from the idea of social engineering, Business Process Re-engineering acknowledges the complexity of the external environment, and the need for an attendant complex view of the internal processes, such that different aspects of the organisation might be working towards different, mutually supportive, objectives. This can be seen in the growing move to clarify purpose and the subsequent stages alongside changes in the appraisal process (systems), a review of organisational structures, and the increasing popularity of programmes designed to influence individual values (resources) towards those of the corporate mission. It is essentially passive in an unpredictable environment, reacting to changes, such that the role of the consultant is to provide information upon how the organisation might better react, and the focus of SHRD remains upon the reworking of the organisation's internal processes in order to meet an externally defined task. The intent is to create equilibrium, and whilst ambiguity is recognised to exist, it is seen as potentially harmful.

The ***Phenomenological approach***, recognises that the 'organisation' does not stand as an independent body, but is a conglomerate of individuals that agree (or collude with) ways of working that together comprise the organisation, and thus together co-regulate the activities and beliefs of the collective. It is the interactions that are of importance, rather than descriptions of 'purpose' etc. The 'mission' and attendant activities are only as valuable as the percentage and power of those agreeing with them, and therefore cannot be imposed. Different parts of the system might well adopt different configurations, and configurations might change as 'needed'. The activities of the system are emergent and feed back into it (Weick, 1977), they can influence all other aspects of the system, and the system itself can be 'far-from-equilibrium'(Stacey, 1993). This approach, therefore, denies the ability to 'plan' or 'control' organisational development - it argues for a resource-based view of the organisation in which the role of 'managing' is fragmentary (i.e. Mintzberg) and offers a valuable critique of the established 'discipline' of strategy.

So What is Strategic Human Resource Development?

Emergent forms of thinking within both the natural and the human sciences have begun to challenge traditionally held views about the nature of knowledge, the status of science; the question of truth and the ultimate purpose of progress. Given this changing context there is a need to re-examine the fundamental premises of HRD. This paper has explored four different views of the nature of management, of HRD, and of the strategic role that HRD plays in organisational development. Each of these could be seen as a form of thinking, a way of life. Clearly these are more like archetypes than they are a true statement of what exists. People, structures, perceptions and intentions vary - it would be difficult to study an organisation and say that all parts of the organisation and all people within it operated as if they were a 'pure' version of one approach. If nothing else, the sort of terminology used in the previous sentence would not be appropriate for all approaches. For example, it is inappropriate, within the phenomenological approach, to talk of 'organisations' as if they had a body and could be anthropomorphised, or of 'people' as if they were machine cogs within 'the organisation' whose function was to 'operate'. A change in approach requires a change in the language and meaning that is used.

The very act of stepping back in an attempt to examine the different approaches is, in fact, a statement of approach. As we step back we are saying that there is a *phenomenon* here that we can explore. We are saying that we believe that there is no one *'right'* way, and that it is appropriate to look at the inter-connectedness of our existence - at the alternatives that might be - that statement. however, is a statement of a *'right'* way!. We can not really step out of this conundrum, but we can try and understand where it might lead us. If we accept that our existence is interpretative, chaotic and complex it is easier to accept that our ways of managing and structuring are normally individual and collective attempts to make sense of this complexity. Each of the four approaches presented above is therefore a *'belief system'*. Each of these belief systems may (or may not) be appropriate for the circumstances that the people concerned encounter. We can therefore shift our area of study - towards the examination of these belief systems in terms of their outcomes - returning to the dependant variable (Swanson, 1996).

A further complicating factor is that (from the phenomenological perspective) both the *'outcomes'* and the 'value' of them are subject to interpretation. There is no longer necessarily a clear and obvious route between cause and effect - and one person's preferred 'outcome' might be someone else's feared possibility / cause. In both theorising about HRD and in the practice of HRD we can no longer assume that a particular intervention at a particular time will produce a known effect. We lose the gloss of certainty that many HRD professionals feel is necessary for their work as academics, consultants, trainers etc. HRD and learning are becoming more central to the needs of the nation (as in Watson, 1994) however, it is not *all* forms of HRD, learning or knowledge acquisition that are being championed. The certainty of ex-cathedra provision is limited in its ability to support empowerment or strategic thinking - instead developers are turning to action learning, the valuing of experience, and explorations of holistic provision (Argyris, 1990; Lee, 1996b; Pascale, 1990; Revans, 1971; Senge, 1990). This shift in provision further increases the complexity and uncertainty of inquiry into the nature (and practice) of HRD.

In adopting a phenomenological perspective we are moving away from inquiry into a reasonably coherent area of study and practice, and into a messy arena that resembles a battle ground of social systems. The study of HRD becomes the multi-disciplinary examination of process that underlie human interaction (as of Baker & Jones, 1996), development and organising. HRD, however, is more than the academic study of social systems. In 'pure' social groupings (friends, family) the activities of the system are largely focused upon maintaining 'successful' interaction, such that members feel satisfaction and sense of belonging through this interaction. The study of HRD, however, assumes a purpose over and above social interaction and allows us to question what the 'purpose' of the system might be - which might *not* be about competitive advantage (i.e. voluntary sector organisations), and might *not* be about enhancing its longevity.

These points go further than a post-modern form of cultural relativism. I suggest that 'management' is about ***agency*** in a pluralistic, relativistic and interpretative world. 'Management' becomes the art of influencing the internal processes such that 'resources' (human and otherwise) are utilised and developed towards the negotiation, emergence and meeting of a generally agreed, but often poorly defined, external purpose. From this perspective, agency also involves the search for the patterning of the whole, for dynamic structures, an understanding of the possibilities and their links - a ***holistic*** approach. Holistic agency is therefore about individual action (or non-action) within a relativistic world (see Lee, 1996a; Lee et al., 1996; for further discussion of Holistic Agency). I suggest that whatever the label, many agents of change (SHRD professionals) find themselves working in this way, and that this is an approach to be studied and to be fostered.

'Strategy' becomes the art of *formulating strategic processes* that influence the collective view of external purpose in line with external 'reality' and internal potential, such that individuals see their activities as influencing, and being influenced by, collective purpose. The challenge is in the need to facilitate a coherent and co-regulated view of the organisation through influencing its processes in a way that captures relevant information and learns from this. Often most learning comes from the outrageous or deviant, thus it is important to include the ability to capture new items, feeding these back to the whole, both for consideration and to indicate possible trends. This approach recognises that there is often no clearly identifiable 'cause' to incidents but that a collection of little things can combine to make them go well or badly.

Whilst much of strategic theory has been developed and can best be interpreted in relation to large bureaucracies, in recognising fundamental processes within an organisation, this approach is applicable whether the organisation is a bureaucracy, SME or virtual network; whether it is multinational or non-profit making - though the challenge of influencing these processes might be different in each case. Thus the study and practice of SHRD allows for a range of different functions and activities. In essence this paper is a plea for further study of SHRD. The organisational world is increasingly adopting views propounded by SHRD professionals, both academics and practitioners. However, if SHRD is to be legitimised as an academic discipline or as an important aspect of practice, then further attention needs to be paid to the conceptual base from which we work. This plea is addressed to both academics and practitioners as both groups face the challenge of making sense of the world, and, together, they are better able to construct the sort of complex and ever-changing picture that is SHRD.

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The Integration of Human Resource Development Into the Strategic Planning Process: A Comparative Case Study of Three Corporations

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The purpose of this study was to delineate the nature of the integration or lack of integration of human resource development (HRD) into the strategic planning process of three corporations. This study revealed four HRD roles that can be represented on a continuum reaching from low integration to high integration. The level of integration is influenced by a number of factors including external business conditions, internal top management support, internal HRD person-specific factors, and internal organizational factors.

Strategic planning is a process that involves an evaluation of a firm's internal strengths and weaknesses as well as its external threats and opportunities. Armed with such knowledge, executive planners attempt to point all organizational efforts in a common direction. While there remains some controversy as to the link between strategic planning and improved company performance, the evidence is mostly favorable. Boyd (1991), using a meta-analysis to combine 29 samples that included 2,296 organizations, concluded: "While the average effect size is small, many firms do report significant, quantifiable benefits from participating in the strategic planning process" (p. 369). Despite the conflicting evidence and even projections of the demise of strategic planning (Mintzberg, 1994), it is now utilized in all types of firms.

Many companies have begun to recognize, however, that these comprehensive corporate plans have not always been implemented as desired and that programs have not been prepared to meet the strategic needs of the organization. Thus, there has been a growing recognition for the need to integrate all operating levels into the strategic planning process. Below, Morrisey, and Acomb (1987) argued that since the strategic planning process requires the continuous involvement of the operating executives throughout the organization, there should be an emphasis on team planning, which builds commitment. The strategic plan should be developed as part of an *Integrated Planning Process*. The integrated planning process ensures that everyone in an organization participates in the preparation of the plan and that everyone in the organization understands the plan.

Unfortunately, few organizations include everyone in the planning process. Notably absent from this body of strategic planners have been the human resource executives, particularly the person(s) charged with the responsibility of HRD. Numerous reasons have been offered for linking human resource development into the strategic planning process (e.g., Nadler & Nadler, 1990; Peery & Salem, 1993; Sonnenfeld & Ingols, 1986). In general, increased costs, lack of coordination, lower productivity, high turnover, and decreased motivation are cited as the price of the lack of integration.

Integration means to bring together or incorporate into a unified, harmonious, or interrelated whole or system (*Random House Webster's College Dictionary*, 1991). In HRD it has been suggested that systems theory aids in understanding complex organizations as a whole. And even when parts are analyzed separately, the recognition of interdependence aids understanding (Jacobs, 1989; McLagan, 1989; Watkins, 1989). McLagan stated, "Most of the important changes in the nineties will and must be treated systemically. HRD will evolve the analytical tools and solutions to meet that need" (p. 51). Moreover, Senge (1990) forcefully argued that the competitive organizations of the future will be learning organizations that pay attention to five technologies. The first, which he calls the fifth discipline, is systems thinking. Systems thinking pulls the other four disciplines (personal mastery, mental models, shared vision, and team learning) into a harmonious whole. Hartshorn (1989) contended that the major lesson from systems thinking "is the need to become part of the strategic planning process" (pp. 86). This study reached out to general system theory for support of the concept of the integration of HRD--or any other function, for that matter--into the strategic planning process.

Research specifically directed toward the study of the integration of HRD into the strategic planning process of organizations is rare. Benoliel (1988) and Bianco-Mathis (1989) reported research

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related to HRD's *participation* in strategic planning or strategic change, but this present study differs significantly (in terms of methodology and focus) from these two studies. Garavan (1991) surveyed 90 companies and concluded that the formulation of HRD policy and plans is necessary in order to have a strategically oriented HRD function. Redding (1990) concluded that strategy-linked training stems from a commitment from top management. The lack of top management commitment to organizational development (OD) has also been found to be a barrier to linking OD and organizational strategies (Mendelow & Liebowitz, 1989). Despite the contributions of these studies, there is still much to learn about the nature of the *integration* of HRD into the strategic planning process.

Research Questions

The purpose of this study was to delineate the nature of the integration or lack of integration of HRD into the strategic planning process of three corporations. These questions guided the study:

1. How is the role of HRD defined in the organization's strategic planning process?
2. What are the barriers to the integration of HRD into the organization's strategic planning process?
3. What are the factors that enable or facilitate the integration of HRD into the organization's strategic planning process?
4. What is the nature of HRD activities as they contribute to the organization's strategic planning process?

Methods

Case study was the basic research design used to delineate the nature of the integration of HRD into strategic planning. Three different organizations were selected for this research activity, an example of what is referred to as a *comparative case study*.

Selection of Cases Purposeful sampling was used. Patton (1990) defined purposeful sampling as the selection of "information-rich cases whose study will illuminate the questions under study" (p. 169). In addition to the sampling strategy, the nature of this study and the limitations of time and geography also required certain criteria for selection. Criteria for selection of the three cases for this comparative case study were (a) the organizations had to have an HRD function with an HRD practitioner responsible for this function, (b) the organizations had to have a formal strategic planning process, and (c) the organizations had to be located within the Southeastern United States. The following three corporations met all of these criteria.

Company A is located in a rural area about 20 miles outside a major metropolitan statistical area in the Southeastern United States. Three plant sites and the mining operations cover about a 50-mile radius. As part of a larger corporation with corporate headquarters in the Northeast, this area operation employs about 1250 people. In business for more than 75 years, the company mines and processes kaolin (a fine white clay) into coatings and filler pigments for industries such as petroleum, paint, plastics, rubber, adhesives, ceramics, textiles, and paper.

Company B is located about three miles outside a major metropolitan statistical area in the Southeastern United States. The four-story office building sits about one-half mile off a major interstate inside a well-landscaped area covering 20plus acres of land. As part of a national insurance corporation with corporate headquarters in the Northeastern United States, this regional operation employs about 1,750 people. In business for a little over 60 years, the company is a low-cost provider in the private passenger automobile insurance market.

Company C, a metropolitan newspaper, is located in a major city in the Southeastern United States. The offices and plant are located in a downtown industrial district about one-fourth mile off a major interstate. This newspaper, employing about 350 people, is one of a number of newspapers owned by a large publishing corporation located in the Southeast. In business for more than 150 years, the newspaper boasts the second largest circulation in the state in which it is located.

Data Collection Data collection included the use of interviews, observations, and document analysis. This study used some standardized questions to obtain specific information about the organizations under study, but the semistructured interview dominated. Thirty interviews were conducted with 21 individuals in three companies, and 26 of these interviews were tape-recorded and transcribed. Observations were made at plant sites, office facilities, training sessions, and strategic planning sessions. Field notes were taken at each of these observations and were organized into typed narrative accounts shortly after each observation. For the purposes of this investigation, the term documents is meant to include any data gathered through sources other than interviews or observations. Documents reviewed included organization charts, newspaper articles, training materials, interoffice memoranda, an annual report, company promotional materials, magazine articles, strategic planning documents, and quality systems manuals.

Data Analysis Since a comparative case study first involves a within-case analysis of each case and is then followed by a cross-case analysis, the first step in analysis is a description of each case. The second step involves the analysis and comparison of several cases (i.e., cross-case analysis), a process Patton (1990) referred to as synthesizing qualitative studies. Merriam (1988) stated that "analyzing data in a qualitative multicase study is identical to analyzing data in a single qualitative case study" (p. 155); the only difference is that the researcher has more data to manage and analyze. In this study, an inductive analysis was used for the within-case and cross-case analysis. Inductive analysis moves from mere description of the cases to interpretation, a process that uses the data to develop conceptual categories or themes.

Conclusions

Two general conclusions or "working hypotheses" drawn from this study are as follows: (1) A delineation of the nature of the integration of HRD into a company's strategic planning process revealed four roles, hereby identified as the nonparticipant, the resource, the stakeholder, and the leader. These roles can be represented on a continuum reaching from low integration to high integration, and they are embodied by a number of HRD activities contributing to the strategic planning process; (2) The integration of HRD into a company's strategic planning process is influenced by a number of factors including external business conditions, internal top management support, internal HRD person-specific factors, and internal organizational factors.

Continuum of Roles The cross-case analysis of these three companies revealed four roles that can be represented on a continuum with low to high levels of integration into a company's strategic planning process. Figure 1 illustrates this continuum.

NONPARTICIPANT   RESOURCE   STAKEHOLDER   LEADER

++

low integration   high integration

Figure 1. Conine Continuum of HRD Roles in Strategic Planning.

At any given time HRD may occupy any of these roles. For example, in Company C the production director's reference to the HR director's division as a support division for the strategic planning process and the HR director's activities in helping other divisions prepare developmental plans for key employees support a resource role for HRD. On the other hand, when the HR director initiated a major strategic cultural change initiative for the company and then later *championed* that initiative throughout the company during the year, he was representing the leader role. Yet, almost all of the other descriptions of his role in the strategic planning process and his activities in the strategic planning process placed him in a stakeholder role. He attended planning sessions, wrote parts of the plan, and was a proactive voice throughout the process. Thus, the predominant role for HRD in Company C was the stakeholder role as was the case with HRD in Company B. While the HRD person in Company A may have taken a leader role in a Total Quality Management (TQM) initiative, the data generally supported a resource role.

Such a model is not unlike Tannenbaum and Schmidt's (1973) continuum of leadership behavior with a range that extends from a very autocratic leadership style to a very participative leadership style. While a particular manager may exhibit any range of leadership behaviors given various contingencies, he or she probably has a predominant style. The idea of a continuum of roles related to the integration of HRD into the strategic planning process was not found in the literature. The closest concept to be found in the human resource management (HRM) literature was in a study by Golden and Ramanujam (1988), proposing a typology of stages of HRM-strategic business planning linkages including the administrative linkage, the one-way linkage, the two-way linkage, and the integrative linkage.

As for each individual role, there are traces of support in the literature for the descriptions of these roles although not the actual roles themselves. For example, the resource role placed HRD in a fairly reactive role in response to the strategic initiatives set by line management. This role was illustrated by a senior manager at Company A when he said that he and his managers make the decision as to where they ought to be going, "and then we look to a human resources group to help us with the nuts and bolts for accomplishing that." Benoliel's (1988) survey interview of 10 organizations led him to conclude that HRD managers tend to be excluded from participating in strategic planning or at best, HRD managers tend to be reactive support persons as opposed to being proactive participants. As for the stakeholder role, authors have proposed and predicted a more proactive, integrated role for HRD (e.g., Chalofsky & Reinhart, 1988; Rothwell & Kazanas; 1989). The stakeholder role is integrated into the strategic planning process by being proactive in the planning process, assisting in making decisions outside of their area, and actually writing part of the plan. Garavan (1995) wrote that "within the context of strategic HRD, a stakeholder is anyone whose actions can affect the management of strategic activities within the organization" (p. 11). The vice president and executive editor at Company C exemplified the stakeholder role when he stated the following in reference to the HRD manager: "You know, this is one of seven or eight people that are here today who are the key players in determining the strategy for the paper."

As for the leader role of HRD in strategic planning, very little is found in the literature although some writers have suggested a stronger leadership role for HRD (e.g., Chalofsky & Reinhart, 1988; Nadler & Nadler, 1990; Torraco & Swanson, 1995; Willis, 1991). The leader role described in this case study places HRD in the position of initiating major strategic initiatives and then championing those initiatives throughout the organization. Further, the leader role, like the stakeholder role, puts HRD in a very proactive planning mode in the organization. Willis and May's (1996) case study of Millbrook Distribution Services offered a definitive leader role for HRD in the form of a chief learning officer (CLO). They described the CLO as being at the same organizational level as a chief financial officer (CFO) or a chief operating office (COO). While no CLO was found among the three cases in this study, the HR director representing HRM and HRD activities at the newspaper leads a key strategic intervention for a culture transformation. In Willis and May's (1996) report, a key function for May in the CLO position for the first two years was leading a strategic intervention for a cultural transformation at Millbrook. Thus, the continuum of roles related to the integration of HRD into strategic planning as presented here is a new concept although characteristics of the roles are found in the HRD literature.

Factors Influencing the Integration of HRD and Strategic Planning The second general conclusion of this study is that the integration of HRD into a company's strategic planning process is influenced by a number of factors including external business conditions, internal top management support, internal HRD person-specific factors (credibility, communication, leadership style), and internal organizational factors (culture, costs/time, organizational planning structure, rate of growth). Table 1 illustrates the three major roles for HRD in the strategic planning process and summarizes the factors (external and internal) and activities that support these roles.

Table 1

Determining the Role of HRD in strategic planning

Factors	Resource	Stakeholder	Leader
External: Business Conditions	-HRD has reduced influence when economic or competitive conditions are unfavorable	-HRD has considerable influence even when economic or competitive conditions are unfavorable	-HRD has considerable influence even when economic or competitive conditions are unfavorable
Internal: Top Management Support	-HRD may not have strong top management support at all times; top management may be going through a transitional period	-HRD has strong top management commitment and top management communicates that commitment throughout the organization	-HRD has strong top management commitment and top management communicates that commitment throughout the organization -HRD may be top management (e.g., CLO)
Internal: HRD-Person Specific	-HRD may lack credibility with line management due to lack of business knowledge and (or) professional skills -HRD may not communicate effectively with line management -HRD tends to exhibit a laissez faire leadership style	-HRD has credibility with line management because of considerable business knowledge and (or) professional training -HRD communicates effectively with line management -HRD exhibits a proactive leadership style	-HRD has credibility with line management because of considerable business knowledge *and* professional training -HRD communicates effectively with line management -HRD exhibits a proactive leadership style

Table 1 (continued)

Factors	Resource	Stakeholder	Leader
Internal: Organizational	-HRD may not be supported by a culture that is committed to the HRD function; firm may be going through a culture change	-HRD is supported by a culture that is committed to the HRD function	-HRD is supported by a culture that is committed to the HRD function; HRD may be a key player in nurturing that culture
	-The organization may be unwilling or unable to commit the time and money needed for HRD consistently over time	-The organization recognizes that the costs and time associated with HRD activities are necessary to sustain the organization over time	-The organization recognizes that the costs and time associated with HRD activities are necessary to sustain the organization over time
	-The organizational planning structure may not be suited to integrating HRD into the process or HRD may not be included in the process	-The organizational planning structure is well-suited to integrating HRD into the process	-The organizational planning structure is well-suited to integrating HRD into the process
	-The organization may not have sustained the constant growth it felt necessary to support HRD consistently over time	-The organization has sustained the growth it deems necessary to support HRD consistently over time	-The organization has sustained the growth it deems necessary to support HRD consistently over time
HRD Activities	-Typical activities include assessment of training and development needs, planning for implementation, and post- implementation assessment	-Activities include attending the planning sessions, challenging the process, and providing input into decisions outside of HRD	-Activities include attending planning sessions and championing major strategic initiatives; provides input into decisions outside of HRD

Implications A major element distinguishing this study from previous studies is its focus on the integration of HRD, as defined from a systems perspective. For instance, Benoliel's (1988) interview survey of 10 companies examined HRD mangers' participation in strategic planning and found some similar factors influencing *participation*. However, the continuum in Figure 1 indicates that this study shows HRD *participating* in the strategic planning process in all but one of the four roles identified. However, the level of integration into the strategic planning process varies considerably with each participating role, and the factors identified in this study (i.e., external and internal) influence the ensuing level of integration.

Willis and May (1996) illustrated the point concerning the leader role being fully integrated when they used Marsick and Watkin's (1994) term *systemic interdependence* to describe May's position as CLO at Millbrook and his working relationship with the other strategic parts of the organization. Similarly, the leader role represented on the continuum in Figure 1 might be described as being *systemically integrated* into the strategic planning process. Several authors (e.g., Hartshorn, 1989; Jacobs, 1989; McLagan, 1989; Watkins, 1989) have argued that systems theory provides the best theoretical framework for the HRD profession. The systems view of an organization maintains that organizations are complex systems comprised of many interrelated and interdependent parts. Pasmore (1988) described several features of sociotechnically designed organizations, including the maximization of cooperative effort through common goal setting, the involvement of employees in important decisions and the sharing of information, the importance of human resource development, and the assumption that people in the organization have the capacity to improve plans. The stakeholder role described in this study embodies all of these features and was exemplified well by the strategic planning session at the insurance company.

Thus, from a systems perspective, the stakeholder role is a strong role. However, there is considerable support from systems literature to move HRD from the stakeholder to leader role. Hall and Fagen (as cited in Willis, 1991) used the term *leading part* to describe the dominant role one element plays in the operation of a centralized system. Willis stated that "leading parts evolve as a system develops, depending on the system's perceived regulatory needs" (p. 181). If modern firms are to become the learning organizations many have predicted (e.g., Senge, 1990), HRD should become a leading part.

While this study has extended theory in HRD, systems management, and strategic planning, it has also made contributions to HRD practice. The continuum of roles that resulted from the findings in this study provides a good starting point for examining a company's commitment to integrating HRD into its strategic planning process. CEOs and HRD managers can honestly examine their own organization and ask themselves where they lie on the continuum.

Future Research More studies are needed to test the "working hypotheses" that emerged from this study. Some type of survey research would be a step in this direction. An ethnographic study might be undertaken to examine the belief systems that guide the integration or lack of integration of HRD into the strategic planning process. Another focus for a study would be to pull a specific factor identified in this study as influencing HRD's integration and examine the relationship between this factor and HRD's role in the strategic planning process. Another study might focus on companies that are in different stages of the life cycle (e.g., introduction, growth, maturity, decline) and HRD's role in strategic planning. Finally, an interesting observation in this study was that in the companies with a stakeholder role for HRD, there was more diversity in the top leadership. Determining if diversity in top management influences the integration of HRD into the strategic planning process would be an interesting study. If successful companies in the future are truly going to become the learning organizations they need to be, the role of HRD in strategic planning is unquestionably an area worthy of further attention and study.

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Human Resource Development Practices in American and Chinese High-technology Companies in Taiwan

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Human resource development is now highly valued in Taiwan. The HRD practices in American and Chinese companies in Taiwan are quite different. Both quantitative and qualitative data concerning HRD practices in the two type of companies were collected for the study. The data showed that evaluation is the weakest part of the HRD practice in both categories of companies. American companies have stronger future perspective, participant commitment and professional leadership than the Chinese companies in Taiwan.

The purpose of this study is to examine the differences in human resource development (HRD) practices between American and Chinese corporations in high-technology companies in Taiwan. HRD is a relatively new field in Taiwan. Although the companies realize that the HRD should be highly valued, how to make HRD fully effective is still an unsolved issue.

It is believed that the process of localizing HRD is important in multinational enterprises (MNE) (Torrington 1994). The foreign companies in Taiwan made their contributions not only in the growth of economy, but also in the transition of the management system. Because of support in the form of documentation and HRD system from the parent country, it is believed that the HRD practices in American companies are better than those in Chinese companies (Chen 1995). Discovering the differences between the American subsidiaries in Taiwan and the Chinese companies in HRD might give us some insight into the trend of localization and/or the path to improvement.

This paper reports the results of a survey on HRD practices and the findings from in-depth interviews with the HR managers of companies in high technology industry in Taiwan. A discussion of implications of these results for HRD practices concludes the paper.

Theoretical framework

HRD Effectiveness. The issue of HRD effectiveness has been raised ever since HRD moved from back to center stage and began to gain a much more important role in the organization than before (Kanter 1983; Chalofsky & Reinhart 1988; Carnevale, Gainer, & Villet 1990). Effective HRD functions not only improve employees' competencies but also help organizations reach their goals. To maximize the effectiveness of HRD, researchers have made the effort to define what effective HRD is. Several researchers have provided the ideas for measurement of HRD effectiveness (Shoemaker 1987, Lippitt 1982, Zenger & Blitzer 1981, Alden 1982, Bell 1984, Chalofsky & Reinhart 1988).

Human Resource Development Assessment Inventory. This study is based on Lippitt's (1976) Human Resource Development Assessment Inventory (HRDAI) for examination of the HRD effectiveness. Lippitt (1976) developed a set of criteria as guidelines for effective development processes. These include: relevant needs, clear objectives, accomplishment, uniqueness, flexibility, skill orientation, professional leadership, future perspective, value system, evaluation, information system, organizational support and participant commitment.

Relevant Needs. The first criterion in Lippitt's model is relevant needs. To examine whether the organization fulfills this criterion, a question must be raised: Does projected HRD take into account the present state of needs and disequilitrium?

Clear Objectives. The "clear" means that the objectives are clear to meet all concerns and measurable. Although not all objectives can be exactly measured, at least they should be stated in measurable terms.

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Accomplishment. Achievement-based behavior is expected and rewarded in the organizations. HRD should be guided by these measures of accomplishment.

Uniqueness. Standard methods and predesigned programs may be used, but certain changes must be made to adapt these to different situations.

Flexibility. Organizations are open and changing from time to time. HRD should be flexible enough to meet the ongoing and changing needs of the human system and the organization.

Skill Orientation. The ability to actually practice what one has learned is the essence of effective growth. Thus, examination of whether the projected HRD stresses skill development for competence in behavior is another important criterion of effective HRD.

Professional leadership. The projected HRD should be led by a professional helper, trainer, or consultant.

Future Perspectives. Lippitt suggests that the organizations should have five-year goals for the future. The plans and goals for the future should be practical.

Value System. People from different backgrounds will have different value systems. An effective HRD administrator should ask if the projected HRD program is founded on an articulated value system whose purposes are clear and philosophically consistent with norms, values, expectations, and goals held by that particular human system or not.

Evaluation. A "whole" evaluation package is needed in the projected HRD. The package includes the technology, concepts and methods of evaluation.

Information System. People involved in HRD should know that analysis, diagnosis and prognosis are taking place in a systematic and informative manner. The organization should have a valuable human resource inventory that provides valid, up-to-date information about the competence of people in the system.

Organizational Support. The projected HRD should have the policies, personnel and budget support, and leaders' involvement. That will make the projected HRD more effective.

Participant Commitment. Effective HRD needs participant commitment. The projected HRD should strengthen the participants' desire to cope, solve problems, and mature.

Research Questions and Hypotheses

The two major research questions in this study were: (1) Are there any significant differences between the HRD practices of American and Chinese firms in Taiwan? (2) How are HRD practices (based on HRDAI) being carried out within the high-tech industry in Taiwan?

The HRD practices questionnaire was used to answer the first research question. The null hypothesis of the question is: there is no significant difference in the human resource development practice of American and Chinese high-technology companies in Taiwan. The qualitative data of the study provided the information and answer for the second research question.

Methodology

Both of the quantitative and the qualitative research methods were used in the study. The quantitative method was used to examine the differences in HRD practices between the American and Chinese companies, while the in-depth interview was used to find out how the HRD practices were being carried out within the high-technology industry in Taiwan.

Subjects. A major weakness that has been criticized in many cross-cultural studies is the failure to control for organizational size, technology and type of industry (Hegandhi, 1975; Adler, 1983). A high percentage of the American companies in Taiwan are in the electronics industry. Therefore, to avoid the above mentioned weakness in this study, the sample will concentrate on American and Chinese in high-technology firms.

For purposes of comparison between the two types of firms, the following criteria are employed to select target firms for this study.

1. The total population includes any firm that employed more than 400 people in 1995.

2. The American target firms were selected from the American Firms in Taiwan. Similarity sized Chinese firms in high technology industry were selected from the list of the Top 500 Corporations and Top 100 Corporations in the Service Industry published by Taiwan's "Common Wealth" magazine in June 1995.
3. A total of 16 companies, 10 Chinese and 6 American high-technology companies in Taiwan, were finally selected.

Instrument. The HRD practices questionnaire was used in this study. The scale of the questionnaire was based on Lippitt's Human Resource Development Assessment Inventory. The questionnaire was responded to by the HR manager or HR staff in the organization.

Twelve criteria, including relevant needs, clear objectives, accomplishment, uniqueness, flexibility, skill oriented, professional leadership, future perspective, evaluation, information system, organizational support, and participant commitment, are reviewed by asking relevant questions. The Answer 5 means the criterion has been considered all the time, and answer 1 means the criterion has not been considered at all. The scale of the questionnaire was shown as follows:

1	2	3	4	5
Not at All	Few Times	Some Times	Most Times	All the Time

Both quantitative and qualitative data were collected.

Results

Sixteen structured interviews were conducted to obtain information on HRD practices in the participating companies. The interview questions were based on Lippitt's Human Resource Development Assessment Inventory (HRDAI). Interviewees were asked to assign a score to each question, to explain why they assigned the respective scores, and to discuss how their companies dealt with the various issues being scored.

Quantitative data. The first research question is : Are there any significant differences between the HRD practices of American and Chinese firms in Taiwan? In order to examine this question, the ANOVA test was applied to the twelve HRD criteria to test the hypotheses.

The comparison of HRD scores of American and Chinese companies is presented in Table 1. Results showed the descending mean of the criteria were: skill based, relevant needs, criteria based, flexibility, participant commitment, organizational support, uniqueness, professional leadership, clear objectives, information system, future perspective, evaluation. From the results, we found that the evaluation is the weakest part of the training process among the selected companies. That means the companies need technology, concepts and methods to produce meaningful evaluation. The skill-oriented is the strongest part of the training process. That means the projected HRD did stress skill development for actual behavioral or performance competency.

The descending mean of the American companies were: skill-based, accomplishment, participant commitment, organizational support, professional leadership(all of the above were 5.00), relevant needs, future perspective, flexibility (all of the above were 4.83), uniqueness, information system (both of above were 4.67), clear objectives, and evaluation. Five of the twelve criteria got the highest score. Results showed the American companies had support from the organization, employees and also from the HR department. Again, the evaluation part and the criterion related to evaluation - clear objective - were the weakest part of their HRD practices.

The descending mean of the Chinese companies were: skill based, relevant needs, criteria based, flexibility, uniqueness, participant commitment, organizational support, clear objectives, professional leadership, information system, future perspective, evaluation. Compared with the results of the American companies, the Chinese companies did not get much support from either organization or employees. Evaluation is the weakest part of the HRD practices in Chinese companies.

Table 1. The Comparison of HRD Criterion of Chinese and American Firms

Criterion	Means	Chinese Firms	American Firm	P value
Skill Based	4.88	4.80	5.00	0.271
Relevant Needs	4.75	4.70	4.83	0.581
Accomplishment	4.75	4.60	5.00	0.082 *
Flexibility	4.56	4.40	4.83	0.191
Participant Commitment	4.38	4.00	5.00	0.003 **
Organizational Support	4.38	4.00	5.00	0.055 *
Uniqueness	4.38	4.20	4.67	0.267
Professional Leadership	4.31	3.90	5.00	0.043 **
Clear Objectives	4.19	4.00	4.50	0.340
Information System	4.13	3.80	4.67	0.229
Future Perspective	4.06	3.60	4.83	0.005 **
Evaluation	3.44	3.10	4.00	0.175

*significant at.10; **significant at .05.

Results also showed significant differences between company type and future perspective, professional leadership, and participant commitment at .05 level; accomplishment and organizational support at .10 level.

Therefore, we can say that the future perspective, professional leadership, participant commitment, accomplishment, and organizational support were better carried out in American companies rather than in Chinese companies. The qualitative data might give us more information and implications of the issues.

Qualitative data. The second research question - How are HRD practices (based on HRDAI) being carried out within the high-tech industry in Taiwan? - was answered by the in-depth interview with the HR managers or HR staff in the companies.

Qualitative data issues most often mentioned by the interviewees included future perspectives, evaluations, professional leadership, and organizational support.

Future Perspective. Most companies only have a one-year training plan. Only four companies have three-to-five year training plans. Not surprisingly, American firms in Taiwan, as subsidiaries of their parent companies in the United States, tend to have more clearly structured HRD programs. Their future plans are built on the existing frameworks in their headquarters. Chinese firms, on the other hand, have to design their own HRD systems from zero. An interviewee from a Chinese high-technology firm said that it is often difficult enough to keep up with scheduled HRD activities let alone foresee future ones. She said, "In this company, the president strongly supports the HRD department. But he tends to believe in imitating others where they have been successful. For example, last month he saw that another company used a video recording to both introduce the company to, and train, new employees. He asked us to prepare a similar video recording, to be completed in one month. We had to postpone many of our regular activities in order to execute this order, as there are only three of us in this department. Things like this often happen, and it is difficult to say what our future perspectives are. Perhaps the blueprint for this is known only to the president. None of us can foresee the situation in the next few years. We are limited to short-term plans at present." Most of the Chinese high-technology firms in this study are in similar situations.

Training systems were begun in the mid-1980s by some of the American companies in Taiwan. Most of the others set up their systems around the beginning of the 1990s. Thus, most companies are still laying the groundwork in their HR departments. As one HR manager explained, "What we can do now is to focus on the present system. Future perspectives for our department are goals and not practical possibilities at this time."

Evaluation and professional leadership. All the interviewees agree on the importance of evaluations in HRD practices. But data from the interviews also revealed this to be the greatest weakness of HRD in Taiwan. A few American companies escape this, as they have guidelines on this from their headquarters in the United States. Almost all the Chinese companies are still struggling with the basics of evaluation.

Based on the interviewees' comments, at least two areas need special attention. First, there is a lack of both HRD personnel and relevant knowledge. An interviewee complained, there are only two people handling HRD here; actually, only one-and-a-half people are involved in the training process. It is very easy to pass out evaluation forms, but we are short of staff when it comes to analyzing the feedback. We end up doing the bare minimum: seeing whether the instructors were satisfied with the trainees or not." Another interviewee said, "We have all the evaluation records, but we don't know how to interpret the results. To tell you the truth, we have neither the knowledge nor the methodology to handle this. Nobody has taught us how to use the data to improve our HRD practices." Another problem comes from the cooperation between of the trainees and their supervisors. Even the HR staff can resolve the above problem. It's also hard to know whether the trainees' behavior changed after the training, especially at the management level. An HR manager complained, "It's hard to conduct the follow-up evaluation after the trainees go back to their departments. We need the cooperation from the trainees' supervisors or the supervisors themselves. But most of time, it's difficult to get the managers' feedback. They always complain that they are too busy to fill out the evaluation form or give the reports back."

Second, there is often a lack of cooperation from the trainees and the supervisors. It is difficult to keep track of the employees' development after the initial training, especially at the management level. An HR manager complained, "It is difficult to conduct follow-up evaluations after the employees return to their respective departments. We need cooperation from both employees and their supervisors. But they complain that they are too busy ... to fill out the forms, to return forms, etc."

Combined with the questionnaire results, the above information pinpoints evaluation as one of the weakest aspects of HRD in Taiwan. Less than 20% of the companies think that their evaluation process is adequate. Clearly, improvement in this area is sorely needed.

Organizational Support. Basically, all the interviewees agree that they have strong support from the top management levels. For Chinese companies, their problems with support generally come from the mid-level management. One of the interviewees said, "The president strongly supports my department. The most difficult thing is to make mid-level managers believe that the activities we arrange are good for them and for their future." Another said, "You don't need for all the managers to doubt the results of the training and to argue with you. All it takes is three or four of them, and you begin to doubt the amount of general support you're getting from your company." This appeared to be a common situation for the interviewees.

American employees, however, seem to have accepted their HRD systems more. An HR manager in an American firm claimed, "Everyone in my company knows when, and what, he(she) needs in terms of training. I think that such training has become part of our lives. You could say that this attitude is company culture."

After analyzing the data, it is found that although most of the top management levels are supportive of HRD activities in an organization (regardless of company nationality), there are still significant differences between American and Chinese companies. American CEOs tend to communicate their views on HRD directly to all levels of employees, thus enhancing the status of HRD in general among the staff. Chinese CEOs communicate their interest only to their companies' HR staffs; this seems to foster a lack of interest in HRD among employees, and consequently hurts the standing of HRD within their companies.

Implications and Conclusions

One of the advantages in HRD of MNEs is that they have support from their parent companies. In this study, the frameworks for HRD practices in American companies are transplanted from their parent companies, with some modifications to suit the culture of the host country. Most of the Chinese companies are still struggling with basic frameworks for HRD practices. Therefore, if the experiences of localization and the frameworks for HRD practice in American companies can be transplanted to the Chinese companies, it will be a great opportunity to improve the HRD practices of the local companies.

Although evaluation is the weakest part of HRD practices in high-technology firms, some companies in the survey did not think evaluation is a big problem for HRD activities. Sharing of successful evaluation experiences and evaluation system with other companies might improve the quality of evaluation in companies that are recipients of this sharing.

The organizational commitment to HRD is relatively low in Chinese companies. As the interviewees mentioned, training is part of the corporate culture in American companies, while some of the employees in Chinese companies still think training has no bearing on their performance. To introduce the concept of life long learning is one of the policies of the government in Taiwan in these years. It may change the employees' attitudes about training and improve the organizational commitment in HRD practices.

As the economic power of Taiwan grew over the last decade. More Taiwanese enterprises made direct investments or set up subsidiaries in other countries. Under these circumstances, successful cases of how foreign companies adapt their HR systems to suit the local culture is a priceless lesson for these Taiwan enterprises. To develop their own management style in a way that includes adaptation to the local culture is increasingly a vital challenge for Chinese companies in Taiwan. The experiences of American companies in Taiwan are a good lesson for them.

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Changing Work Cultures: Assessing HRD Needs in Francophone West Africa

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This paper reports findings from a study of HRD expectations and requirements in the Cote d"Ivoire, a West African nation undergoing large scale economic change. The study's aim was to uncover the perspectives of local nationals who would model and lead reform efforts. Theoretically, the research was grounded in doctrines of cultural relativism and organizational change and designed to add cross-cultural knowledge of HRD models.

This decade's privatization movement has caused work cultures to change in much of the developing world (Traore, 1990; Woods, 1995). Creating the infrastructures and manpower needed to support new productivity models and fully integrate into global markets requires skills and knowledge not commonly found in state controlled work cultures.

Traditional thinking suggests that change must be stimulated from the outside, through a transfer of work and development models from "First World" countries. Thus, economic transformation often places Third World organizations in a confusing state of social transition as they attempt to reconcile cultural differences inherent in indigenous practices. Moreover, these issues challenge HRD practitioners who are most often charged with the training and nurturing of new skills and behaviors.

This paper will report findings from the Cote d'Ivoire, a developing nation in Francophone West Africa that is undergoing rapid large scale change. Government leaders in this country wish to support reform efforts by creating their own national center for the development of human resources. This assessment will thus frame the center's creation. The study was notably designed to explore change needs from the cultural perspective of local nationals. The following purposes framed the research:

1. To investigate the perceived need for change.
2. To identify perceived employee and organizational change requirements.
3. To explore perceived cultural roots and contexts that may influence change efforts.

The research was theoretically grounded in doctrines of cultural relativism and organizational change. The research first followed the premise that the transfer of foreign models often fails because it does not begin with an understanding of local culture (Dia, 1996; Jones, 1989). Prior study suggests that goals and strategies are subject to cross-cultural variation because they are, in part, shaped by nationally grounded differences about the nature of work and organizational life (Hofstede, Neuijen, Ohayv, & Sanders, 1989; Laurent, 1986).

Second, aspects of change theory influenced the need to understand HRD needs through the eyes of local nationals. These postulates suggest that change interventions must be compatible with current value and belief systems (Rogers, 1973). Likewise, change occurs faster and the recipients are less resistant if the perceived gap between new and current expectations is small. Additionally, the recipients must believe that there is a need to transform current policies and practices and, in turn, perceive these new models as beneficial. Finally, the influence of organizational leadership, in the form of founding fathers and their recruits, on work cultures (Schein, 1985, 1991) influenced the decision to collect data from informants in senior and mid-level management who would most likely teach and model reform efforts.

Methodology

The theory-driven sample (Glasser & Strauss, 1967; Strauss & Corbin, 1990) consisted of 70 intensive ethnographic interviews (Spradely, 1979)conducted in French with informants in the private, para-public, and public sectors. Senior level managers were at the CEO or COO level whereas mid-level managers were drawn from 3 functional areas: human resources, marketing, and finance.

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Focus Questions

Constructs of productivity were linked to expectations for economic growth and evolution. This connection framed the desire to understand the informants' own concept of productivity and development through the following focus questions:

1. How do the informants define organizational and individual productivity?
2. What do the informants see as necessary organizational support and individual behaviors needed to reach their definitions of productivity?
3. How do informants define constraints to productive behavior?

It is important to note that these focus questions did not constitute testable hypotheses. Instead, they guided and helped focus this exploration of HRD needs and assumptions.

Procedurally, informants were asked to define their own concept of productivity by describing what they considered to be worthwhile goals for their nation's economy and for their own business since productivity is key to global competition and successful privatization. Likewise, informants were asked to identify perceived characteristics of a productive employee. Informants were then asked to describe both current and ideal management practices and employee development models. Finally, informants were asked to describe organizational constraints, individual behaviors, and societal values that could impede productive work behavior. Illustrations and examples were additionally captured by asking informants to tell one or more stories (Hansen & Kahnweiler, 1993) about a manager who must deal with a nonproductive employee or group of employees.

Data Analysis

All interview data were recorded, transcribed and coded (Strauss & Corbin, 1990). Categorical development followed procedures for open and axial coding. Selective coding was then used to identify categorical links. These links led to data convergence in the form of emergent themes. Efforts to ensure internal validity involved the triangulation of data through multiple analysts (Tammivara & Enright, 1986). Findings and emergent themes were additionally confirmed local key informants.

Findings and Conclusions

Emerging Themes Productivity constructs were defined as challenges to current work practices and societal norms. The findings permitted the thematic development of five productivity challenges: (1) assuring types of quality, (2) ways of becoming competitive, (3) addressing kinds of infrastructure problems, (4) ways of changing management behaviors, and (5) addressing African values and attitudes towards work. Sackman's (1991) four-component framework of cultural knowledge provided a topology for interpreting the findings. Thematic data for "becoming competitive" will illustrate this approach:

Dictionary Knowledge: The "what is." This section contains definitions of challenges. Competitive challenges were described as really knowing the market, satisfying the customer, producing high quality products, improving management and reducing business expenses. Managerial challenges, for example, were broken down and further defined as working effectively in international settings, managing employees in an objective manner, and motivating employees to be responsible and creative.

Directionary Knowledge. The "how." These findings provide formal and unwritten rules for how roles and tasks are carried out. This section also includes current rules for relationships and processes associated with change and learning. In interpreting the data at this level, the question arises, for example, of how managers currently encourage responsibility among their employees? Informants offered, for the most part, negative examples and discussed what managers did to demotivate employees.

Informants indicated that managers, for example, did not typically share information and delegate authority, although employees feel empowered when information was shared within an organization. Job evaluation and compensation were not tied to performance. Credentials in the form of degrees, associated with high profile projects, and family and ethnic ties often determined pay scales and promotional opportunities. Furthermore, it was suggested that change was hard to implement and often yielded confusing results.

Recipe Knowledge: The "should." Recipe knowledge consists of remedies for improving ways to carry out roles and tasks. Informants indicated that managers should practice an open, participative style of management. Employees should be better informed about the relationship of their work and business goals. Managers must be willing to take risks with their employees and permit them more independence. Likewise, employees must be able to reach decisions quickly and be directly responsible for the consequences of their actions which includes both the good and the bad.

In turn, promotions should be based on performance and not credentials or nepotism. Moreover, managers must be able to clearly communicate work criteria and purposes.

Axiomatic Knowledge. The "why." This section often yields the richest data as it attempts to offer explanations that underlie the first three knowledge levels. In this case, informants concluded that a lack of clear communication and information sharing was rampant in most organizations. Moreover, many managers did not explain the relationship between a given job and the companies business objectives because companies did not practice strategic planning. Informants linked their ineptitude in planning and forecasting to the lack of problem-solving taught in school and university. They explained that they learned theory without application. Informants also linked planning constraints to the uncertainty and interference of one's personal life. Family and community obligations, such as funerals or the needs a village member in distress, were not taken lightly and typically came before one's job and business. Thus one's personal obligations could unexpectedly cause one's work to be halted for an indefinite period of time.

While such fealties nurtured community bonds and solidarity, they also fostered distrust and divisiveness between different ethnic groups in all organizations. Moreover, objective decision-making, information sharing, teamwork, and participative management were often impeded by tribal loyalties. Finally, passive employee behavior and paternalistic management styles reflected a respect for authority that one is expected to show for one's elders. The term "firm father" was used to describe the ideal manager. Moreover, the term "little or big brother" was used a great deal to describe family or tribal relationships among individuals working even in the same company. Relations based on seniority complicated work relations especially between young managers and older subordinates.

Informants also explained that Africans disliked the open acknowledgment of conflict. It was often hard to address the strife that often accompanies the identification of change needs and the implementation of new strategies. Another complicated task for managers was the sanctioning of inappropriate behavior.

Implications The informants clearly saw the need to transform their present work cultures. Moreover, the data emphasized the human side of this transformation. That is, the informants believed that productivity would be mostly enhanced through a change in their own work behaviors rather than though massive capital or financial acquisitions. It is notable that this finding was consistent in the private as well as the public and parapublic sectors. The sector that expressed the greatest need for change was the parapublic sector whose organizations were expected to become profitable and self-sustainable in five years or less.

Training development for managers, for example, is needed is areas such as strategic planning, organizational communication, team building, and managerial delegation. Career development is needed is the areas of employee counseling, employee motivation, and performance evaluation. Finally, organizational systems must be changed to delayer management, enhance information sharing, and ensure objective measures of hiring and promotion. While the informants indicated that they had been exposed to many of these theories, there appears to be a lack of application.

The desire to privatize, westernize and capitalize is very strong. However, this country is not likely to change its cultural core values and its basic class structure nor diminish its community and tribal loyalties. Informant data strongly suggested that these cultural frames will interfere with the transfer and application of new HRD theories from afar. Many of the findings reported in this study clash with the values of spirit of profit motive, material security, and self-reliance and self-interest that typically drive Western models of entrepreneurship (Dia, 1996). These differences are also supported by Binet (1970) and Hofstede (1984) who found Africans to be far more collective, nurturing, hierarchial and fatalistic than, for example, their European or American counterparts. Some theorists characterize this economic and societal emphasis on tribalism and ethnicity as the "economy of affection" (Hayden 1983; Hayden & Peters, 1991). They suggest that these ties play a significant force in framing work cultures that can not be denied.

Human behavior is greatly shaped by one's cultural beliefs. Cultural beliefs are not necessarily rational. They are grounded in values that were learned and developed as early as one's childhood. In this country, these beliefs are additionally reinforced by the constant sense of community obligation that shape employees' personal and professional lives.

New Knowledge in HRD

African management research conducted by The World Bank (Dia, 1996) suggests that organizations who have successfully introduced foreign models into existing systems are those who have build upon existing cultural frames. It thus follows that a change in work practices and HRD models can be supported or hindered by the perceived similarity between current and new cultural expectations (Hansen & Brooks, 1994).

A leading utility and hotel chain were typically cited, in this country, as "best practices" organizations by researchers and development experts. A few illustrations of why these companies were considered exemplary offer suggestions for the cross-cultural transfer of HRD models from developed to lesser developed nations. Both companies encouraged employees to think of the enterprise as their village or community and the CEO as their chief. Efforts to ensure a collective spirit, build on the importance of group solidarity and trust, and decrease political infighting prohibited questions or discussion about an employee's ethnic and tribal background. (In one company, this was grounds for dismissal).

Operations were decentralized and management layers were reduced by half. Managers were encouraged to delegate while maintaining the myth of power distance (Hofstede, 1984) culturally needed to ensure the cooperation of older employees. Moreover, managers improved their employee counseling skills in order to provide the kind of nurturing atmosphere culturally found in village societies. Promotion and salaries were tied to performance and sanctioning protocols were made consistent. Such procedures permitted managers to avoid requests for favors form friends and family without appearing disloyal or unfriendly.

Profit sharing plans encouraged a sense of ownership. Employee benefit plans were modeled after village social welfare systems. Not only were benefits improved, all of the employees systematically were asked to contribute to a disaster fund (a kind of social safety net) that gave employees "in need" financial help. Moreover, village rites such community meetings to exchange information and a council of elders to hear grievances, rule of matters of employee assistance and advise the tribe's leader were incorporated into organizational practices. Thus, organizational issues and problems on all levels were viewed in the same way one would collectively view threats to village security. Employees were encouraged to work in cross-functional teams and act as back ups for colleagues who must absent themselves for family illnesses and funerals. Moreover, company savings systems and better benefits encouraged greater employee loyalty and concentration by reducing the financial strain associated with unforseen family and tribal obligations.

The informants at the above two companies were proud that they were able to transform their cultures in little more than five years. Change at this speed tends to defy most thinking about organizational change which suggests that significant change requires double the amount of time (Trice & Beyer, 1993). These "best practices" companies believe that change occurred because their employees wanted to change, interventions were perceived as beneficial, and the "economy of affection" was respected. Yet, these informants did not believe that their work is complete. They describe their task, now, as one of maintaining the transformation. They stressed the power the local culture and its ability to erode reforms if these traditions are underestimated and not continually integrated into changing company practices and policies. Likewise, employee behavior must be understood, rewarded and when necessary forgiven within the context of their belief systems.

Summary

While inferences are not generalizable, these data raise interesting questions that merit consideration. The data indicate that work beliefs reflect nationally shaped differences that can impact the transfer of foreign work and development models. As Africans seek ways to improve their productivity and international competitiveness, it is understandable that they will be encouraged to consider approaches that have been successful for "First World" investment partners and business rivals. Building on local cultural frames, as illustrated in "two best practices" companies reported in this study will enhance the success of these cross-cultural transfers and international partnerships.

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Human Resource Development in the People's Republic of China

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This paper will describe the history and present situation regarding HRD in the People's Republic of China. It states the problems faced previously by HRD and analyzes the reasons, introduces the transition after China's reformation of its economics system and opening to the outside world, and describes some practices to strengthen human resource development in meeting future challenges. Extant literature and the personal experiences of the senior author are relied on for the information presented.

Brief Introduction to Human Resources in the PRC

The People's Republic of China is the third largest country geographically in the world and has a population of about 1.2 billion. Of this number, about 810 million are classified as human resources, meaning here that they are over 16 years old and have the ability to work. Six hundred and one million are employed, with 150 million in cities, 440 million in the countryside, and 11 million in private businesses in various locations. The rate of unemployment is 2.6% in cities (as of 1993) (Personnel Ministry of the People's Republic of China, 1994). The diverse needs and problems of such a large population are the main tasks faced by China. However, while the large population is, to some extent, a heavy burden, it is also a huge potential if well developed, to serve as employees, managers, and consumers. So human resource development is and will always be a main issue in China.

In China, human resources fall generally into five categories: farmers, workers, civil servants, professionals, and others (for example, students, the unemployed, etc.). Professionals are those who are highly educated (including those with advanced vocational education) or persons who have highly-developed professional skills (those with scientific and technical titles) (Xiang, 1987; Zhang & Zhao, 1987). Today science and technology are the major production factors; thus, China is paying more and more attention to professionals' education and development. As of 1993, there were 26 million professionals in China, 14 million of whom have higher education and 12 million with technical secondary school education (Personnel Ministry of the People's Republic of China, 1994). This paper will emphasize the professionals' development.

Problem Statement

The problem to be answered within this paper is, "What are the past and present factors influencing the development of human resource development in the People's Republic of China?"

Methodology

Two primary methodologies inform the content of the paper. The first is the traditional review of the literature. Much of the literature reviewed does not exist translated into English. While English titles are

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used in the references, interested readers should be aware that these are mainly Chinese documents, except for those published in English journals. The second approach was a participant-observer approach. The senior author of this document is currently the Director of the International Cooperation Department of the Personnel Center of Liaoning Province in the northeast of the People's Republic of China. He has served as manager in most of the departments of the Center. He has worked for twenty years in various aspects of human resources and human resource development within the People's Republic of China and has experienced first hand the transition from the Cultural Revolution to China's currently rapid transition to an open economy. He is currently a Humphrey Fellow at the University of Minnesota where he is putting primary emphasis on Human Resource Development within Public Agencies. This experience has helped to illumine the literature.

Previous Situation for HRD

Before 1976, China was a closed country with a planned economic system and self-reliance policy (not relying on foreign countries was a high value). At that time, the development of human resources focused primarily on political development, especially during the period from 1966 to 1976. For example, people were required to take fixed time each week to study politics; while middle school students were asked to go to the countryside to live and work for more than one year (called "again education") after graduating. The people who worked in factories and farms, or who served in the army could be recommended to go to university for higher education, according to their political performance, without carefully considering their intelligence and knowledge. Therefore, the whole human resource development situation was backward, even though China still had numbers of highly qualified professionals at that time (Xu & Ma, 1992). (For an extended history of HRD in the People's Republic of China, see Shi & McLean, 1995).

However, China was not aware of this problem and did not know whether there were differences between its human resource situation and quality and those of foreign countries, for China's door was closed, so there were no international comparisons possible. During this period, some believed that China had more qualified human resources than other countries. However, this opinion changed after opening the door to the outside world.

Facing the Problems

From 1976, China began to reform its unreasonable systems. In 1979, China began to implement two new policies with important historical significance--reforming the economic system and opening to the outside world. This occurred through introducing a market system and strengthening international cooperation with different countries, resulting in a rapid increase in the economy, with an annual economic real growth rate of around 10% for many years (e.g., nearly 13% in 1992 and 13% in 1993) (US Dept. of State, 1995). The World Bank predicts that China's economy will grow 8-10% per year until the year 2000 (US Dept. of State, 1995). One of the challenges still faced by China, however, is human resource development. China realizes that both reforming the economy and opening the market system need large numbers of highly qualified human resources (Deployment Dept. of Personnel Ministry of PRC, 1993). China is currently underdeveloped in both individual training and development and organization development.

Individual Development. To carry out its economic strategies, China focused on importing advanced technologies from foreign countries for domestic science and technology reform. A series of Special Economic Zones was set up to attract foreign companies to invest and set up manufacturing operations. During this process, some Chinese companies were taken advantage of by foreign sellers when they imported what they thought were advanced technologies but, in fact, were outmoded technologies and equipment. (While it is true that some of the technologies were new to China, they were not up to date and not what national strategy emphasized). This was possible because many companies did not know the situation of technology development in the world. Some companies were frustrated in international competition because they did not know international regulations and conventions and did not have sufficient international business experience (Dai, 1994).

The Special Economic Zones built along the east coast attracted large numbers of foreign companies to invest and build foreign company subsidiaries or foreign-China joint ventures. However, in the beginning, foreign companies had difficulty in finding enough or sufficiently qualified Chinese workers, professionals, and managers, which interfered with the progress of this strategy.

As a result, China had to reconsider its human resource development problems and ways to solve them (Yan, 1991b). Interviews and a review of the literature suggested five reasons why human resource development practices have been backward.

1. People's knowledge, especially that of professionals in science and technology, have become outmoded. China's door was closed for many years, it had almost no academic exchange programs or activities in science, technology and education with advanced countries, such as the United States and Japan. As a result, knowledge presented in universities in China remained the same without obvious change for many years. Therefore, when the country opened up, professionals were unable to accept and integrate a large quantity of new scientific and technical knowledge coming from foreign countries so suddenly.

2. Professional development was ignored. In 1986, a human resource development department investigated 10,048 professionals in Shanghai (the largest city in China whose people are the best educated). It showed that, from 1983 to 1985, within three years, 7% received over 6 months of professional development, 5% received 3 to 6 months, 6% received 1 to 3 months, and 82% received no professional development (Liu, 1988). The situation with workers and farmers was worse. In addition, as human resources were divided only into cadres (including professionals), workers, and farmers at that time, the training could not fully focus on individual professional needs. A study in a more limited context (PRC-US joint ventures) (Shi & McLean, 1996) likewise found that training and development was still in the beginning stages of development.

3. Business people had little international business knowledge and experiences. Before opening of the country, there were not many international business majors in universities. In addition, firms that were buying and selling were controlled by the government, so they did not have to pay close attention to international factors in performing trade and commercial business. They had only to follow the plans made by the government; international business plans were usually based on goodwill between countries rather than on competition.

4. There was a cultural barrier between Chinese and foreign companies. China has about 5,000 years of history, and its people were strongly influenced by this long history and culture derived from it, so their ideas and behaviors could not be easily changed. Chinese had little cross-cultural education, so they usually judged or understood international issues only by its own criteria. Therefore, when they confronted different cultures, and different models and norms of behavior, they did not understand and responded with a negative attitude. (For example, they were surprised when foreigners sat on the table to discuss questions, or they did not have the same idea about friendship, a very important value for the Chinese). Of course, foreign companies had the same problem; for example, they found that they usually could not get an immediate reply during technical and business negotiations, because they did not know that the Chinese value group decisions). So sometimes they felt that something between them was going wrong. This cross cultural problem interfered with the progress of opening up.

5. The old human resource management system limited human resource transfers. An individual's permanent personal file moves with the employee from job to job and is very important in determining one's position and advancement (Zhao, 1988). These files include records about ten aspects of incumbents in government, institutions, and enterprises, such as wages, position, cadre or worker status (treatment with regard to salary and pensions is different), length of service (important for level of wage and pension, and promotion),family relationships, political status, educational experiences, travel records, and so forth. After a job transfer, almost everything done in the new organization is based on the experiences in the former organization, though sometimes the position is the exception. That is, decisions are based almost solely on the personal file records. However, human resource departments in diverse organizations usually restrict qualified professionals' transfers and do not deliver their personal files. In this case, changing a job is very difficult. On the other hand, foreign companies, joint ventures, or private firms do not need these files to determine salaries, job responsibilities, etc. People were uneasy about

taking chances with this. They also felt few incentives to giving full energy to their present positions (Hu, Shen, & Zhou, 1988).

Organization Development. In China, organizations have been mainly categorized as government departments, institutions, and enterprises. An institution is an organization under a related department of the government, implementing public services. These are financed in three ways: 1) total support by the government; 2) mixed support from the government and from independently generated revenues; and 3) solely from independently generated revenues. In the first instance, all funds collected are turned over to the government. In both of the other situations, some of the money can be kept by the institution. Before economic reform, many government departments were in charge of the management of both institutions and enterprises (for example, wage standards, employee numbers, personal promotions and transfers, production profits, etc.). Some functional differences between government departments and institutions were not very clear. This is traditional within a planned economy model. After the economic reforms, almost all organizations in China faced a new challenge as they were urged to adapt to the new national and international situation or environment. As a result, the nation implemented a series of reforms in, for example, structures and functions of government, institutions, and enterprises.

Under the new economic system and international situation, some organizations, in the beginning, did not operate well. There were many organizational reasons, including overlap and surplus in some functions, surplus of employees, lack of relationships between the inside and outside of the organizations, lack of individual and organizational incentives, and so on. The investigation in Shanghai in 1986 showed that 55.6% of professionals gave only half effort to their jobs, 6.8% gave less, and only 37.4% gave full effort. While these people were full-time employed, only 22.5% of people had sufficient full-time work (Liu, 1988). As the goals and functions of the organizations changed, the structures of the organizations need adjustment, and individuals need to be reeducated or developed.

For many reasons, professional transfers were not very common. According to the investigation mentioned above, 60.7% never changed their jobs, 20% did one time, and 19.3% had more than one transfer (Liu, 1988). (As Shanghai is one of most attractive cities in China, the number experiencing transfers is probably higher than the average of the country) Further, dismissing employees is not encouraged or is very limited. Therefore, the Chinese government in recent years has paid close attention to organization development and human resource development. In the past few years, China has insisted on implementing different policies to reform and build new functions in governments, institutions and enterprises.

Reform and Transition

To respond to these problems, the following efforts have been undertaken:

1. Reform of higher education.

a. Students who want to go to university take national exams in subjects such as mathematics, physics, literature, history, etc., go to different universities according to their scores. Thus, rather than basing such decisions on political factors, students will now get a different education according to their intelligence, interests, requirements, and priority of skills. Previously, all qualifying students received tuition and housing at no charge. Recently, universities began to collect a small part of the actual tuition fees from all students. Students whose qualifications fall below the minimum may still attend with the payment of a higher fee. In this way, persons whose scores are just below the requirement of universities may attend, making provision for students who are not good at taking exams or for whom the scores do not show their real competence.

b. Set up a few new universities, such as international trade university and tax university according to the requirements of an international business and market system. Many old universities have been reorganized with new and refreshed majors focusing on marketing , international finance. international economic law, and so on.

In addition, TV university and evening university were also set up for persons who are not qualified for formal universities and people who are on-the-job. In addition to greater access, students have classes taught by the best national professors (in TV university) or the best local professors (in evening universities). Through this education, people who are on-the-job freshen their knowledge and then are more qualified for their jobs, and some find new jobs in new fields.

2. Strengthening of vocational training

a. Evening special professional training classes have been encouraged. These kinds of short-term training are usually implemented by universities and other educational institutions and cover a wide field, for example, foreign languages, accounting, law, computers, cooking, etc. (Zhang, 1994) In addition, both national and local TV stations have set up educational channels. One purpose is broadcasting a series of professional seminars, such as modern management, western economy, foreign trade, foreign language (such as, English, Russian, Japanese, French), and computer applications. This training has helped the Chinese to adapt to the new national and international environment.

b Middle schools are now divided into two parts after junior high school: senior high school and vocational middle school, which separates students into two parts--those who hope to go to university and those who want to work after they graduate from the middle high school. The students who want to work after graduating go to vocational schools and begin to study a special skill needed by society besides the necessary fundamental education, which has provided a large group of qualified workers.

c. In order to meet the needs of the transition of the organizations, many organizations encourage their staffs or employees to refresh their knowledge and skills. Some organizations might give them a little (sometimes all) financial support and allow them to take a one-day leave each week for day-time studies (Ma, 1988). Some companies have set up training centers to train managers, professionals, and workers according to their situation. Some organizations have their own universities, and the majors and training are closely associated with their own requirements. If required, they will send prospective persons for short-term training in universities, research institutes, or other companies in China or foreign countries. In addition, a few companies have set up a training strategies such as apprenticeships to professionals to train new university students to achieve potential competitive advantage (Yan, 1991a).

d. Local government encourages professionals in cities to help those in rural areas so professionals in rural areas can accept new knowledge and apply new technology as soon as possible (based on a Chinese tradition/value called "help each other"). Each year, many kinds of groups (such as, teachers, doctors, engineers, agriculture technicians) are organized by schools (universities), hospitals, factories, and institutes to visit the countryside to enhance professionals' knowledge and skills there (Yan, 1992). Now, farmers are using advanced techniques in their farm fields and factories are finding some of their products to be very popular when sold in international markets.

e. Promotion of professional examinations is assisting in the recruitment of civil servants, incorporating both written tests and interviews. They are designed to choose people who have foresight and a broad perspective (Liaoning Personnel Examination Center, 1994, 1995). The professional foreign language exam is required for people who want technical titles, such as engineer or pharmacist, to guarantee that they can directly and quickly incorporate up-to-date knowledge from countries which are advanced in the relative fields without having to wait for language translation(Liaoning Personnel Examination Center, 1994, 1995). After on-the-job training, some professionals, such as accountants, cashiers, and international business persons, often take professional exams to obtain professional position certificates and to show that one is qualified to do that kind of work. For example, if one whose job is international business does not pass the examination in his or her field, he/she will have no right to sign business contracts with foreign companies.

3. Encourage young people to study and professionals to work abroad, and the state gives financial support to prospective people when they study or work overseas. This policy pushes people to be involved in international advanced science and technology and to develop cultural understanding and inter-business connections. For example, considering the requirement of business between China and Russia after disintegration of the former Soviet Union, the Liaoning Human Resource Center organized 255 people to study Russian language and business, and now those people are playing an important role in international business between China and other countries which are independent from the former Soviet Union (Liaoning Personnel Center, 1985-1995).

4. Implement preferential policy to attract excellent Chinese people who graduated from overseas to come back and work in China. They are usually provided with working labs or financial support to do work in their field and conduct or develop his or her assistants. In addition, international experts are invited to China for teaching, working, or giving lectures (Liaoning Personnel Bureau, 1992).

Significantly, more and more common people realize the importance of human resource development. Many people, especially young people, who are on the job go to evening classes which are associated with changes in their jobs, their interests, or their future. They say they are going to develop themselves. Some young families hire housework-helpers to cook, take care of the child, and clean rooms while they study in evening classes, as they consider that the training organized by their organizations are limited. Some organize their own study activities, for example, a foreign language corner (an open, public place, such as a large square downtown) and reading associations. At an English corner, many people (including business manages, students, civil servants, professionals, workers) meet to practice spoken foreign languages (mainly English) at a fixed place each evening from May to October (different cities have different times). Although the language environment at English corners is not very good, it is effective.

After opening to the outside world, China imported investments, advanced technology and management, and also some kinds of foreign cultures came with them. China began to understand other cultures. In the past few years, China has been publishing books, magazines, and other materials and holding diverse foreign culture seminars, broadcasting TV films to introduce foreign histories, lives, culture, and so on. But this impact has been much less than the impact from technology. China has chosen to emphasize technology over culture. But this does not mean that China does not care about new thoughts and having a good culture. In the past few years, the hottest phrase in China has been "transforming ideas." And a few people realize that cross cultural development is very important. They believe that different people in different countries have different thinking models and norms of behavior, and these are largely influenced by their special culture. This is not to say that one is correct and one is incorrect. For example, ways to show "yes" and "no" in different countries have different ways. Only through intercultural training can people from different countries understand each other and have a possibility for good cooperation. This suggests that China is taking in some good cultural components from other countries.

Since many human resource development initiatives have been undertaken in China, human resource quality in China is increasing rapidly.

Future Challenges

In spite of the major steps China has undertaken in the field of human resource development, some problems still exist. For example:

1. The number of people receiving higher education is still limited. Each year, only about 20% of new employees come from university or higher vocational education (Personnel Ministry of the People's Republic of China, 1994). This is far less than required.
2. Science and technology in China in many fields are still backwards compared with advanced countries, and there is a lack of balance across fields. Therefore, human resource development is seriously restricted by the deficiencies in science and technology.
3. Since the majority of institutions and enterprises are state owned, some managers focus on immediate interests and not long-term ones (short-term behavior). So they do not pay close attention to human resource development in their organizations.
4. Access to information (technology, management, new ideas, future issues, etc.) is quite limited. Foreigners in the United States often feel that diverse information comes from all directions like huge waves; you are unable to take in all of it, but you can not avoid its influence. From this, people are challenged and given opportunities.

China is struggling with these issues and trying to figure out how to respond to these challenges. The Chinese recognize more and more what this world really is, and how to learn, understand, and deal with world issues are continuously changing. They increasingly find that, almost wherever they go in China, they can find products made in foreign countries or foreign-China joint ventures, such as Coca-Cola. Therefore, people are realizing that world issues have become globalized and complex, and China can not avoid international cooperation, and intervention and competition from countries all over the world. So China needs people with new knowledge and skills to respond to these challenges, especially new professionals who must be internationally oriented (Dai, 1994).

People who are responsible for human resource development are involved in research and are working to prepare people for the new economy. But they have no accurate notion about what it will take to develop such internationally-oriented professionals or qualified employees for the evolving economy. Nor do they know by what criteria to identify, select, and develop such employees. This is the challenge that Chinese human resource development professionals must now confront..

Conclusion

With the rapid changes that have occurred in recent years in the People's Republic of China with respect to human resources and human resource development, it is reasonable to expect that continuing, rapid change in policies and practices will continue. In the process, it is likely that human resource development, with its three-pronged thrust of training and development, organization development, and career development (McLagan, 1989), will continue to grow and have an increasingly positive impact on business practices.

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The Impact of Actor Strategies and Work Type on Learning Projects: a Multiple Case Study

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This study demonstrates that actor strategies and work type influence learning projects. These are instruments to systematically organize informal, incidental, and formal learning activities, carried out by a group of employees around a central work-related problem. A multiple case study was conducted of four learning projects in two organizations. Results from a qualitative analysis indicate that actor strategies have more impact than work type. Managers, trainers, and employees prefer different strategies.

Training is an important tool of human resource development. Its usefulness seems limited, however, to clearly defined qualification needs for which formal off-the-job learning activities can be designed. The shift of attention towards training on-the-job is an important extension of this approach (Jacobs, 1994). It is also widely acknowledged that a great deal of learning occurs informally and incidentally on-the-job (Marsick & Watkins, 1990; Lave & Wenger, 1991). This way of learning is likely to be effective, in that it responds directly to the work problems that employees experience. A combination of informal and incidental with formal learning activities may yield the best opportunities for organizations and their employees to solve the particular problems confronting them (Senge, 1990; Dixon, 1994; Van der Krogt, 1995).

Theoretical Framework and Problem Statement

Using informal and incidental learning for human resource development confronts us with a problem. How to capitalize on the strengths of informal learning, without resorting to mere formalization of these learning activities? The concept of a learning project may be useful in this respect.

A *learning project* is regarded as an instrument to systematically organize informal, incidental, and formal learning activities conducted by a group of employees, around a central work-related problem (Poell, Van der Krogt, & Wildemeersch, 1996). By solving work-related problems in a learning project, employees develop their competencies and simultaneously improve their work. Participation in a learning project comprises activities within three processes (Van der Krogt, 1995): development of a learning program, development of a learning policy, and the actual qualifying and learning process.

Empirical research indicates that learning projects can be very diverse in nature (Poell, 1995; Poell & Van der Krogt, 1996). In some learning projects, group reflection on current work problems is stressed, while other learning projects focus on the investigation of a new working method. Sometimes formal training activities comprise a large part of the learning program, while other projects emphasize groupwise review of individual learning experiences.

The reason why learning projects differ is as yet unclear. The learning network theory (Van der Krogt, 1995), however, proposes two possible explanations for the variation found among learning projects. 1) Actors (also referred to as stakeholders, such as employees, trainers, and managers) employ different *action strategies* in order to have the learning project correspond to their ideas and interests (cf. Cervero & Wilson, 1996). For example, trainers will be inclined to design formal courses, managers will try to implement a more efficient work organization, while learners will want to solve the concrete work problems that they face. Which type of learning project emerges depends on the interactions between these actors when they organize learning and work arrangements. 2) The diversity of learning projects is related to the different *types of*

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work in which they are carried out. For example, professional work and machine-bureaucratic work (Mintzberg, 1979) require different learning projects. This may be due to the different learning potential that these types of work offer.

Both actor strategies and work type are expected to contribute to the differences found in learning projects. The latter explanation proposes that a certain type of work will lead to a certain kind of learning project, while the former suggests that actors will create the kind of learning project they consider most useful to their purposes. The separate contribution of each factor cannot easily be determined, since the two are likely to be interrelated. What is more, all learning projects experience a *constant tension*, brought about by the need to do justice, on the one hand, to the various actor strategies *('actor relevance')* and, on the other hand, to the demands associated with the work characteristics *('work relevance')*.

For example, even if both managers and trainers are convinced that teams should learn to work more autonomously, they are likely to find that employees express different interests and, moreover, that the current work climate prohibits any organizational change in the short run. But they will still try to somehow accomplish their goals. In this view, the processes and structures in learning projects result from the strategies of actors to deal with the tension between their own interests and the organization's needs. The ongoing interactions between actors cause both learning arrangements and work to be constantly subjected to change.

To get a grip on these dynamics, we need to examine how actors in learning projects interact in order to integrate learning and work according to their respective views. *Four theoretical models* are distinguished that actors use to deal with the constant tension between actor relevance and work relevance:

1. In so-called vertical learning projects, the management decides on new work policies, the work-preparation staff translates these into work programs, and the education staff designs a learning program in which the learning group takes part. Tension is reduced by *representative consultation* of employees.
2. In horizontal learning projects, the learning group attempts to solve complex problems by processes of reflection on experiences, developing joint action theories, and bringing these into practice in an investigative manner. Tension is dealt with by *continuous mutual adaptation* of work improvement and employee development.
3. In external learning projects, the group is inspired by action theories developed outside the organization (e.g., new work methods developed by professional associations). The members of the learning group match their work to the acquired action theories. Tension is reduced by employees' *participation in professional innovation*.
4. In liberal learning projects, skilled individuals team up to enrich their own work improvement and learning programs with group reflection on their experiences. Tension is dealt with by creating *individual arrangements*.

This study examines the constant tension between actor relevance and work relevance experienced in learning projects. It aims to explain why learning projects differ from each other. We are not primarily interested in 'the right kind' of learning project to fit a certain work type. Rather, we wish to establish the different options available for actors to reduce the tension between actor relevance and work relevance. This should result in an empirically validated typology of learning projects.

Research Questions and Hypotheses

This study focuses on learning projects in two types of work, namely machine-bureaucratic work and professional work (Mintzberg, 1979). The following questions were investigated:

1a. What type of learning project is found in machine-bureaucratic work?
1b. What type of learning project is found in professional work?
2. Do different actors use different strategies to reduce the tension between actor relevance and work relevance?

The following hypotheses were formulated:

1a. Learning projects in machine-bureaucratic work are characterized by the model of representative consultation. These are vertical learning projects.

1b. Learning projects in professional work are characterized by the model of participation in professional innovation. These are external learning projects.

2. Different actors prefer different strategies to reduce the tension between actor relevance and work relevance.

Methodology

Participants. Twenty-two people took part in this study. They were involved in four learning projects, conducted in four departments of two organizations.

In the first organization, a general hospital, two learning projects were studied. The first one (hereafter referred to as 'Lab') took place in a specialist chemical laboratory that provides work for 16 people. The work in this laboratory was expected to be of a professional nature. Participants were three analysts and four managers. The second one ('Care') was carried out in a surgical care department where 28 people are employed. This department was expected to have machine-bureaucratic work. Participants were three nurses, two managers, and one trainer.

In the second organization, a school for adult secondary education, two learning projects were studied. The first one ('General') took place in the department of general education which gives work to 32 people. The work in this department was expected to be of a professional nature. Participants were two teachers, one manager, and one trainer. The second one ('Dutch') was carried out in the department of Dutch as a Second Language for Immigrants (DSLI), which employs 30 people. This department was expected to have machine-bureaucratic work. Participants were three teachers, one manager, and one trainer.

All participants were highly educated, at the higher vocational or academic level. Fifteen participants were women. Five out of eight managers, two out of three trainers, and eight out of eleven employees (analysts, nurses, and teachers) were women. The number of years of work experience in the organization ranged from two to twenty, with an average of nine years.

Procedure. The study is a multiple case study of these four learning projects. All available documents of each case were studied, for example minutes of learning group meetings, proposals for learning programs, and evaluation sheets. Participants were selected for interviews on the basis of these documents and initial talks with key persons.

Participants were interviewed about the learning project using a semi-standardized topic list. The interviews took place from September through December, 1996. Interview topics included: work characteristics; participant's definition of the central problem; learning activities undertaken by the participant; the role played by the participant in the policy development, program development, and qualifying process; participant's action theories about learning and work; participant's opinion on the successfulness of the learning project.

Interviews lasted 60 to 90 minutes and were tape-recorded. Two to three page summaries were made by the interviewer and offered to participants for correction. Fifteen summaries were corrected and returned to the interviewer. Analysis was performed using fifteen corrected and seven initial interview summaries, supplemented with the available documents.

Analysis. A computer program for qualitative data analysis, called Kwalitan, was used to score interview scenes. For each learning project, a qualitative analysis was conducted which focused primarily on a description of the activities undertaken by the different actors. The activities took place in the context of the development of a learning program, the development of a learning policy, and the actual qualifying process. This analysis provided information on the strategies that different actors use to deal with the constant tension between actor relevance and work relevance.

Additional descriptions were made of the content structure and the organizational structure that resulted from the activities. This analysis provided information on the type of learning project that had emerged.

The result consisted of four case descriptions of learning projects. To determine its nature, each learning project was then compared with the four theoretical models that actors can use. Also, the cases in machine-bureaucratic work were compared with the cases in professional work.

Results and Conclusions

Short Case Descriptions.

Case 1. 'Lab' is a specialized chemical laboratory where analysts have highly skilled, non-routine jobs. They are highly autonomous in their work. The chemist working in the department plays a vital role in the introduction of new professional developments relevant to the analysts.

This case starts about a year ago, when the managers of the laboratory attend a training course on logistic improvement of business processes. They are urged to practice in their own laboratory what the trainers preach. They make a project planning to render the laboratory more efficient. Key activities are the measuring of time-per-task and the exact description of materials needed for each task. The analysts are involved in the project as well. They are asked to do the measurement and description part in small groups. The results will be fed back into the whole group.

The analysts are glad to be taken seriously, after feeling neglected in their complaints for a long time. A reorganization carried out two years ago has seen the other laboratories that perform more standardized jobs being treated with priority. 'Lab', in the words of the analysts, "has been a mess ever since". The analysts think the best solution to this problem is not to measure up their work and then tighten the schedules, but to improve work coordination and grant them more opportunities for professional development. They say that the managers are applying good logistic principles to the wrong kind of work.

Still, most of the analysts engage in a number of reflection sessions with the managers, devoted to describing the actual way they do their job. New work schedules are designed on the basis of this information. The material lay-out of the laboratory is improved. The analysts are quite satisfied with the new lay-out, but they claim that the new work schedules do not function adequately, because their specialized tasks cannot be standardized as far as time planning is concerned. The analysts claim that the managers are the ones who have learned most in this project, that is, the managers have finally found out how complex the analysts' work is. The managers are now thinking of other ways to make 'Lab' more efficient.

Case 2. 'Care' is a nursing department with highly standardized functions. Over the last three years, the department engages in a small-scale experiment to differentiate the nursing function into senior, regular, and assistant functions, in order to improve the quality of patient care. The senior function is non-hierarchical and stands at the center of care planning. The assistant function is concerned with cleaning, feeding, and personal patient care. Together with the regular nurses and assistants, seniors have to coordinate patient care.

Senior nurses and assistants start working next to regular nurses, even though nurses did not (and still do not) see the difference between what a senior does and what they do. What is more, even some seniors do not see the difference: "How do you get regular nurses to do what should be done if there is no hierarchical relationship and if they know very well what should be done themselves?" Still, the seniors earn more money. The problem is that nobody knows what differentiation of functions actually means, or how to go about achieving it successfully. The manager is worried, because her image of what seniors and nurses should do is far from realized. The seniors have their own meetings with the manager, in which they reflect on real-life situations that have taught them something new. Communication at work between seniors and nurses, hoewever, is increasingly considered problematic, as witnessed in regular staff and work meetings.

Then the management decides that the whole department will engage in a learning program. The training department is asked to run three separate groups: management will learn about coaching (two days), seniors will learn about supervision (three days), and nurses will learn about intercollegial consultation (one day). It is stressed that the new skills should be practised as much as possible in daily work, and people really try their best during patient visits and work meetings. At a collective follow-up training session, the three groups take the opportunity to actually practise together. As a result of this session, one of the trainers is asked to become a process councellor for the group of senior nurses and the group of nurses. It is felt that communication is improving slowly, but nurses are still wondering why functions had to be differentiated in the first place. They have other ideas of how patient care can be improved without creating separate functions.

Case 3. 'General' is an adult education school department organized along professional lines. All teachers teach their own traditional subjects. They use and adopt well-known teaching methods. They are part of school-internal and external-professional bodies that offer them new insights into the didactics of their subject.

This case starts two years ago, when the school management asks an educational consultancy firm to help the school become more team-oriented and overcome the traditional individual work attitude of teachers. The school faces a changing student population in need of ever more flexible schooling programs. The advisors hold a survey among all teachers, in search of learning needs and problem areas. On this basis, teachers are invited to participate in learning groups to tackle the problems they encounter in their work. Two groups emerge, one of which is 'General' (the other one being Case 4, 'Dutch'). Participation is voluntary, since the management is primarily interested in the experiment itself, which will bring the school experience with team-based learning and work. Some 10 out of 30 teachers form a learning group around the theme 'open learning for adult students'. One manager, who is also a part-time teacher, participates in the learning group. Together with three teachers she forms a small preparation group who think out ideas for the plenary meetings. Firm discussions about the theme take place within this preparation group.

The first two plenary meetings are presented by two teachers, who talk about their own experience with the topic of 'open learning for adult students'. All teachers are very enthusiastic about the sessions and some start little experiments with 'open learning' in their own classrooms and the open learning center. A range of articles on open learning are discussed. Some members of the learning group attend each other's classes. The results of these activities are fed back into the group.

Two more plenary sessions are held, in which the consequences of open learning for school regulations are discussed. The manager does not fully agree on this next step, but accepts it for the sake of the learning group. She tries to work out a more consistent learning program with the help of an outside advisor, whom she contacts regularly about this problem. The teachers, however, are quite satisfied with the way the learning group is going. They enjoy the discussion, they are actually applying the new insights in their work, and they feel supported in their efforts by the learning group. At the end of the school year, the learning group suffers from a school reorganization and is temporarily stalled. But most participants including the manager are still eager to continue like they have done.

Case 4. 'Dutch' is another learning group in the same school as 'General'. The work in this department, however, differs from 'General'. DSLI is a relatively new subject, for which only few learning materials are available. There are some standardized modules that teachers can offer their students. What is more, the teachers are relatively unskilled in this subject, because teacher training in this domain is still scarce.

The manager of the department asks an outside expert on DSLI to design a training program around the theme of 'self-directed learning of immigrant students', which had emerged from the survey as a key problem area. The training course begins with an introductory meeting, for which all teachers are invited. Nearly all teachers attend this first meeting. During the course of six consecutive training sessions, however, voluntary attendance drops from twenty to six. The manager feels he cannot force people to attend the sessions. The teachers are unsatisfied with the course, which they feel is too theoretical and too trainer-driven. They do not see the relevance of the course content to their work. But there is little explicit protest. The teachers who finish the course do so simply because they are glad with any opportunity to learn about DSLI. They say their classes are benefiting from what they have learned in the application of some ideas from the training course.

The external trainer does not feel responsible for creating other learning activities outside the training program; the manager does not feel responsible for the creation of a true learning group; and the teachers are quite passive in the reception of DSLI knowledge. The teachers do try several times to start practical group discussions during the training sessions, but these are cut off by the trainer. This learning group suffers from the same school reorganization as 'General' and quickly fades away. Most people agree that they have not really tried to work out ideas about a teacher-driven learning group. They simply went with the trainer-driven flow.

Types of learning projects. Two learning projects were conducted in work with more machine-bureaucratic characteristics ('Care' and 'Dutch'), while the other two cases were carried out in work with more professional characteristics ('Lab' and 'General').

The dominant model used in 'Lab' and 'Dutch' to reduce tension between actor relevance and work relevance was representative consultation. These learning projects can therefore be termed *vertical*. In this model, the managers are dominant actors in the development of the learning policy of the project. In 'Lab', the managers also dominate the development of the learning program. 'Dutch' sees this process put in the hands of an external expert. In both cases, only the qualifying process is the dominant domain of analysts/teachers.

The dominant model used in 'Care' shifted from representative consultation in the beginning to continuous mutual adaptation later on. In other words: the top management decides that it would be good to have an experiment and implement a new work model, after which all actors in the department are expected to work out the accompanying problems for which no standard solutions are available at the time. They find themselves all in the same boat, searching for the best way to proceed, in all three processes. This learning project is a *vertical-horizontal* hybrid.

The dominant models used in 'General' were participation in professional innovation and continuous mutual adaptation, yielding a hybrid *external-horizontal* learning project. Both external insights and internal group reflection inspire this learning group. The teachers are dominant actors in the program development, policy development, and qualifying process. The manager acts as "one of the teachers".

Actor strategies. We found different interactions between actor strategies in the four cases.

'Lab' sees managers who prefer representative consultation. The analysts are more anxious to participate in professional innovation, but since this learning project gives them no such opportunity, they adapt to the model of representative consultation.

'Care' sees managers who prefer representative consultation. When they realize this model will not work, they switch to continuous mutual adaptation, which seems to be the preferred strategy of the nurses. The trainers follow this switch and adapt their approach to it.

'General' sees managers and teachers who both prefer continuous mutual adaptation, while teachers also prefer participation in professional development. In general, they all agree that these are the best ways to proceed in the learning project.

'Dutch' sees managers and trainers who both prefer representative consultation, while teachers prefer individual arrangements. Since the trainer is a dominant actor but her actions are not well-received by the teachers, the latter are forced to create individual learning programs to gain anything at all from the learning project.

Conclusions. The results support hypothesis 1a, in that vertical learning projects are found in machine-bureaucratic work. In one case, a vertical-horizontal hybrid emerged.

The results do not really support hypothesis 1b. Contrary to our expectation that professional work would see external learning projects, a vertical one and an external-horizontal hybrid emerged, the latter lending only some credibility to our hypothesis. There are two possible explanations why this hypothesis was not supported. First, the work type may not have been quite as professional as we thought. Perhaps it showed more characteristics of skilled labour, machine-bureaucratic work, or even adhocratic work. If we stick to hypothesis 1b, this would account for the different types of learning projects that emerged. Second, the work type may not be the most influential factor. It may be 'overruled' by the strategies that actors use to create the learning project they see fit for the problem at hand. This is the domain of hypothesis 2.

Hypothesis 2 is supported by our results. Different actors were found to prefer different strategies to reduce the tension between actor relevance and work relevance. Generally, managers seem to prefer the model of representative consultation, trainers seem to adhere to the choices made by managers, and employees seem to prefer participation in professional innovation and individual arrangements. Continuous mutual adaptation is a model that both managers, trainers, and employees seem to prefer when the nature of the central problem to the learning project so demands, that is, when nobody knows how to start solving it, let alone proceed in the right direction.

Although both factors are found to be influential, actor strategies seem to have more impact on the type of learning project than does the type of work in which it is conducted. Dominant actors, regardless of the work type, have a way of putting their strategy high on the agenda of the learning group, thereby trying to change the work type in their favored direction (e.g., managers trying to make work more machine-bureaucratic, employees to make it more professional). Depending on the position of the other actors, they can or cannot prevent this from happening.

We have shown that there is a wide variety of ways to deal with the constant tension between actor relevance and work relevance experienced in work-related learning projects. The type of learning project that emerges is related to the type of work and, more strongly, to the dominant model of actor strategies in use. The theoretical typology of four models to deal with tension seems to have an empirical basis of support.

Contribution to New HRD Knowledge

This study has offered new views on the integration of learning and work. Work-related learning projects were presented as an alternative to formal training, in that they can be regarded as instruments to systematically organize work-related learning. The study emphasizes the importance of recognizing different actor strategies and work characteristics in organizing work-related learning. It provides actors with a range of alternative strategies to organize learning in a way that corresponds to their ideas and interests, and to their work.

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Learning the Ropes in the Workplace by Primary Computer Users---Organizational Socialization and Adaptation

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The purpose of this study was to determine those factors that influenced successful assimilation into the workforce for primary computer users. The study focused on individual employee perceptions of instances in their work that reflect either (a) effective or (b) challenging and problematic aspects of their job. Using the critical incident technique, 65 nondirective/open interviews were conducted nation wide. Two groups were interviewed: novice employees and experienced employees. Seventy codes emerged from the seven interview questions.

The problem with which this study is concerned is that historically, office/work-related research in office education/training has focused on the general of lists of tasks and/or skills. Even the recent SCANS report, "What Work Requires of Schools," documents five competencies and a three-part foundation for skills and personal qualities necessary for substantial job performance. While none would doubt the veracity of such a list or the need for it, it is still a list of skills. Another example of the nature of workplace competencies and an indication of the breadth of expectations that goes beyond specific skills, is the Workplace Basics report from the American Society for Training and Development. The most fundamental of their seven skill groups is "Learning to Learn." Including this, the remaining six skill groups are the following: Learning to learn; Three R's (Reading, Writing, Computational); Communication; Listening and Oral Communication; Creative Thinking/Problem Solving; Self-Esteem/Goal Setting--Motivation/Employability-Career Development; Interpersonal/ Negotiation/Teamwork; and Organization Effectiveness/Leadership.

The fundamental importance of "Learning to Learn" as a job competency is reinforced by research focusing specifically on secretaries which concluded that learning the job is a major part of the job (Hart-Landsberg, Braunger, Reder, & Cross, 1992). Part of learning the job means understanding the role which a worker plays as part of the larger work environment. Other research (Hirshhorn & Mukray, 1992) has supported the conclusion that skill possession alone is insufficient.

As industry continues to spend billions of dollars each year on additional training required to bring employees up to needed performance levels, it would appear evident that the continued identification of required skills alone is not a sufficient basis for preparation of future workforce employees. It appears that what current practice has yet to do is consider educating the "whole" person with regard to how they fit into the "big" organizational picture. The process of socialization or "learning the ropes" in new job settings can be viewed as a more productive perspective than training alone which focuses only on routine work tasks or skill-based competency lists (Feldman, 1991). Rather, the focus should shift to the larger question of an individual's conformity to or deviance from the demands of the organization and the extent to which such performance contributes to organizational effectiveness. Therefore, the purpose of this study is to determine those factors that influence successful assimilation into the work force for primary computer users. The focused was on individual employee perceptions of instances in their work that reflect either (a) effective or (b)

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challenging and problematic aspects of their participation in a work group. A full understanding of these factors will be useful to all office/business teachers and trainers in developing training curricula appropriate for the workforce for the future.

Objectives

In order to gain a more holistic understanding of work requirements, namely perceptions that computers users have of job demands, employer expectations, and problem-solving resources, three study objectives were developed. They are to:

1. Determine when primary computer users feel competent and why;
2. Determine how obstacles/problems are handled on the job;
3. Determine the most challenging parts of primary computer user jobs and why.

Need for the Study

Industry surveys have continued to support the need for better-educated employees who not only possess the basic "Three-Rs", but have broader workplace skills with a foundation of knowing how to learn on the job (SCANS, 1991; ASTD, 1990; Hirshhorn & Mukray, 1992; Feldman, 1991). However, these reports have also confirmed that a highly technology-dependent, information-based society is too dynamic to support the assumption that individuals should be the primary focus for teaching employment competencies. Rather, employment competencies exist not in individuals, but in a complex system that includes social work settings, tools, problems, and communities of people who have a common purpose. In short, employment competencies can be neither understood nor communicated for learning apart from some meaningful employment context. The individual worker must function in concert with a whole employment entity. Without the wholeness that comes from the interaction of a complex situation, the individual has little opportunity to make an effective contribution and become a competent, successful employee.

Current training practices are geared toward instruction in and mastery of a list of technical skills, and little attention has been given to the development of higher level cognitive skills such as problem solving or learning as part of a work team. At its simplest, this qualitative/naturalistic inquiry study is needed because of the historical precedent of the generation of lists of skills needed by office workers. A more social/cultural perspective would broaden the scope of what can be examined at the work site. This study permitted many primary computer users to be interviewed so as to gather a depth and breadth of data unobtainable through traditional survey research. This more holistic, case-oriented approach allowed employed primary computer users to describe exemplary performance and challenges in their work in a open-ended way that will eventually allow common aspects of successful performance to be identified. The descriptions of challenges, obstacles, and problems will provide insights into the nature of technology problems and successful problem solving practices as well as areas for needed instructional or organizational support. Deeper understanding will be gained about skills that are important in information systems employment settings and also about how resources and other constraints of the work setting affect individual performance.

A clear understanding of the organizational culture is critical to the success of any employee, and a critical aspect of organizational culture is organizational effectiveness. This means each employee must determine the "behaviors, attitudes, and knowledge [needed] to achieve success on the job both as an individual and as a member of an organization" (Carnevale et al, 1990, p. 353). This process of learning how to behave where, when, and with whom is often referred to as "learning the ropes." Carnevale et al (1990) go on to report that organizational adaptability or "An individual's ability to adapt to an organization's particular operating culture is perhaps the single most helpful skill in the search to achieve workplace success" (p. 356). This begs the question, Where in the training curricula is the issue of organizational adaptability addressed? At what point in the office education curricula can (or should) employment competencies be integrated with the demands of organizational work groups?

Current research regarding employee adaptation and socialization and organizational adaptability is beginning to establish data to support the premise that, in fact, education and training can no longer focus simply on needed skills but rather needs to expand its focus to include the *entire* individual who will enter the workforce and the *context* in which this person assumes a role. Learning is being recognized as ubiquitous in ongoing activity (Lave, 1993). Learning is also inherently social (Mercer, 1992). The learning that trainers/teachers of office workers are most interested in for their students is learning which results in changes in knowledge and action. It is the intent of this study to begin to examine these contexts in order to gain greater understanding of workplace learning within the office settings.

Procedures

Given that both learning and competent work performance are inherently social activities, activity systems theory was chosen as a conceptual based upon which to develop the research questions of this study, to direct the choice of procedures, and guide the data analysis. Activity systems theory has usually been identified with the work of Engestrom (1989) and Lave (1988) and has been the basis for research in understanding complex social activities (Lave, 1990, 1992; Cole, 1991; Cole & Engestrom, 1993; Moll, Tapia, & Whitmore, 1993; Mercer, 1993; & Pea, 1993). The research "Learning the Ropes: The Social Construction of Work-Based Learning" (Hart-Landsberg, el al 1992) not only applied the concept of activity systems to work settings, but focused specifically on the work of secretaries. In essence, activity systems are considered to be the smallest unit of analysis for understanding individual behavior in social groups.

An activity system is comprised of the following components: a community with a common purpose; subjects (employees), instruments or tools; objects or outcomes of activities; a division of labor or work-related roles; and rules (either implicit or explicit with affect behavior). Not only is the activity system as a whole seen as the unit analysis, but it is has a historical basis for its existence, and the entire system is in a constant state of change through inner contradictions which lead to disruption, innovation, change, and the development of the system itself, including its individual participants (Engestrom, 1993). A deeper understanding of organizational culture and the activity systems which comprise it can be gained through ethnographic methods that include long-term visits within employment settings (Flanagan, 1954; Borg & Gall, 1989). The critical-incident technique can capture employee interpretations of their work settings.

The critical incident technique was selected as the most appropriate through which to gather data relevant to the purpose of this qualitative research project. This technique allowed for the capture of employee interpretations of their work settings and was a method which could be used consistently by a national group of data collectors. The use of the critical incident technique has recently been identified as among those job-analysis tools which are most likely to capture a more wholistic or professional-oriented description of work-place requirements (Bailey & Merritt, 1996; and Merritt, 1996).

Prospective interviewers were solicited at two national conference: the 1994 Delta Pi Epsilon National Research conference and the 1995 National Business Education Association conference. At these conferences, sessions were held to acquaint possible participants with the purpose of the project and an overview of the procedures. The interviewers were provided with an instructional booklet which detailed the procedures for conducting the interviews. Approximately 38 volunteers agreed to interview two primary computer users for this study. A primary computer user is defined as an employee in an information processing area of the firm who uses a desktop computer for more than 50% of his/her job responsibilities. At least two different employees were interviewed in each firm contacted: one employed in this firm for at least six months but less than one year and one employed in this firm for at least three years but less than five years. Equal representation of gender was sought. Sixty-five nondirective/open-ended interviews were conducted, recorded, and transcribed in their entirety. The transcribed interviews were mailed to the interviewers who in turn shared them with the interviewees. The transcripts were then reviewed for accuracy and completeness by the interviewees. These face-to-face interviews lasted from 30 to 60 minutes each. The following questions guided the interviews:

1. Describe as many critical/significant/important experiences that are example of what you do will in your current job.
    a. Why do you feel competent?
    b. How did you learn to do this?
2. Describe as many critical/significant/important experience that are examples of problems in your current position that you could not solve quickly on your own.
    a. What do you do when you have a problem?
    b. What resources do you use when you have a problem?
    c. When do you or have you felt incompetent and why?
3. What experiences would you like to have that would have helped you or could help you to become more competent?
4. What other roles would you like to try in your organization?

Findings

Demographics. Relevant data regarding gender, education, age, size of employing firm, and number of years of work experience were gathered. Not surprisingly, the majority of participants, 89% (n=58), were female, with 11% (n=7) males. The educational background of the participants was quite varied with the largest group, 33.9% (n=22) holding a bachelors degree; followed by high school diploma, 29.2% (n=19); associate degree, 26.2% (n=17); and certificate, 10.7%, (n=7).

The participants range in age from 19 to 55, with the majority, 75.4% (n=49),between 20 and 39 years of age. Most of the participants also worked for a medium-large or large firm, 81.5% (n=53). For this study, a medium-large firm was defined as one employing 100-499 people and a large firm as one employing 500 or more people. For the purpose of this study, two groups were interviewed: novice employees and experienced employees. Novice employees were those employed less than one year at their present firm and accounted for 55.4% (n=36) of the group; and experienced employees were those employed one or more years at their present firm and accounted for 44.6% (n=29) of the group. The study participants' job titles varied somewhat; however, the following emerged as the most prevalent: office workers, 32.3% (n=21); executive secretary, 10.8% (n=7); data entry clerk, 9.2% (n=6); reports specialist, 3.1% (n=2); word processing specialist, 3.1%, (n=2); and other, 41.5% (n=27).

Table 1 - "Why do you feel competent?" Codes and Rank Order

Category	Number of Responses	% of 65	Rank Order
Mastery of computer-based system/software	47	72%	1
General office work	29	45%	2
Production of high-quality, accurate work	23	35%	3
Drawing on special expertise	16	25%	4
Interpersonal skills	16	25%	5
Helping other solve problems	14	22%	6
Developing projects/procedures with minimal instructions	13	20%	7
Ability to interpret expectations/prioritize/anticipate	12	18%	8
Ability to explain/interpret computer-generated information	8	12%	9
Phone communications	8	12%	10
Master new software without formal training	5	8%	11
Training others on computers	5	8%	12
High quantity/efficient work	3	5%	13
Grammar/writing skills	1	2%	14

Interview Codes. Based on the interview questions developed for this study and the coding process which followed, a total of 70 codes emerged for the seven questions. Tables 1-7 present the codes and their subsequent rank order with one indicating the most common response. The participants were asked what they do well or why they feel competent. Mastery of computer-based systems/software was ranked number one, as provided in Table 1. Not surprisingly, the most common code for the "Why I feel competent" category which emerged from the data for these participants was "Mastery of computer-based system/software." Indeed, in today's technology-impacted business environment, the next two most common codes, general office work and production of high-quality, accurate work, are to be expected for this study group.

Those interviewed were also asked to share how they developed these competencies. As indicated in Table 2. The most common response was that they simply learned the skills on the job.

Table 2 - "How I learned to do this?" Codes and Rank Order

Category	Number of Responses	% of 65	Rank Order
Informal, on-the-job training/observation/picking things up	46	71%	1
Formal classroom training programs while employed	32	49%	2
Prior formal education	30	46%	3
Transfer of knowledge from other systems/prior experience	26	40%	4
Self-taught	24	37%	5
Using books/references/manuals/company policy guides	23	35%	6
Access to individuals	15	23%	7
Asking questions	14	22%	8
Pursuit of own interests	7	11 %	9
Help lines	5	8%	10
Creation of personal notebooks	5	8%	11
Examination of prior work	5	8%	12

When those interviewed were asked to describe problems which they encountered in their daily work, nine categories emerged from the data. These categories and their rank order appear in Table 3. Again, as the participants are primary computer users, it is not surprising that the most common problem encountered was that relative to technical and software issues.

Table 3 - "Problems encouraged" Codes and Rank Order

Category	Number of Responses	% of 65	Rank Order
Technical problems: software versions; system down; transcription issues	36	55%	1
Depending on other people for information/work/support	20	31%	2
Using new software	18	28%	3
Getting accurate information	11	17%	4
Dealing with workflow--pressure versus slack	10	15%	5
Lack of experience	9	14%	6
Knowing expectations	6	9%	7
Prioritizing work from several people	2	3%	8
No problems	1	2%	9

The follow-up questions to problems encountered asked those interviewed, "What resources do you use when you have a problem?" The common codes which emerged here perhaps reveal the critical aspect of the socialization effect within an organization where an individual develops a relationship with others to whom they may turn for help. The codes and their rank order are presented in Table 4.

Table 4 - "What resources are used?" Codes and Rank Order

Category	Number of Responses	% of 65	Rank Order
Another person, on-site or in organization	60	92%	1
Using on-site material	37	57%	2
Just coping/patience/logic	21	32%	3
Self-learning	13	20%	4
Communicate directly with people involved	11	17%	5
Help lines	9	14%	6
Other persons outside organization	7	11%	7
Using personal notes	3	5%	8
Anticipate possible solution & present to decision maker	2	3%	9
Delegate/hire new person	2	3%	10

The other critical aspect of this study was to determine when these individuals felt incompetent. Not surprisingly, the most common response was "learning new software." Again, given the extensive use of computers by these individuals, this was an expected problem area. Table 5 illustrates the common codes for this category and their rank order.

Table 5 - "When do you felt incompetent?" Codes and Rank Order

Category	Number of Responses	% of 65	Rank Order
Learning new software	15	23%	1
Learning new job	13	20%	2
Need broader understanding of company or topic	12	18%	3
Need deeper software understanding	10	15%	4
Don't feel incompetent	10	15%	5
Communicating expectations	7	11%	6
General mistakes	5	8%	7
Technical dilemma	3	5%	8
New job assignment	2	3%	9
Lack of authority	1	2%	10
Performing infrequently/lack of familiarity	1	2%	11

As all the study participants had worked in their current jobs for at least six months, they were in a position to share desired experiences which they felt would help them become more competent in their everyday work. The most common responses, as evidenced in Table 6, include "greater software/computer training" and "more on-the-job training."

Table 6 - "Experiences desired" Codes and Rank Order

Category	Number of Responses	% of 65	Rank Order
Greater software/computer training	32	49%	1
More on-the-job experiences/training	26	40%	2
More formal education	15	23%	3
Specific skill other than software or computers	9	14%	4
General company familiarity/communication within company	7	11%	5
Learning general work expectations	4	6%	6
Uncertain	4	6%	7
None	1	2%	8

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Finally, participants were asked if there were other roles they would like to try in their organizations. The two most common responses represent a curious divergence. The most common response indicated either a move up or across to a different job. The second most common response indicated no change desired. These and the remaining responses are presented in Table 7.

Table 7 - "Other roles I would like to try" Codes and Rank Order

Category	Number of Responses	% of 65	Rank Order
Move up or across to different job	29	45%	1
No change desired	18	28%	2
Next higher level up in organization	12	18%	3
None in this office/organization	10	15%	4
Need/desire for a degree (associate or bachelor's)	10	15%	5
Particular job not desired	8	12%	6
Expand existing job	8	12%	7
On-the-job training	1	2%	8
Job opportunities uncertain in company	1	2%	9

In summary, the data which emerged from the participants in this study provide some support that this group of primary computer users do, indeed, demonstrate those six qualities reported in the Workplace Basics report from the American Society for Training and Development. Those interviewed were independent learners, sought help when needed, and recognized specific area for needed continuing growth and development.

Potential Contribution of the Study

The historical importance of specific job competencies to the preparation of office employees is acknowledged by proposing to broaden the scope of defining these competencies in a way that coincides with current research and conceptual development in the fields of education, training, psychology, anthropology and sociology. Researchers of strong repute who identify themselves both with formal educational settings as well as organizational development in industry have challenged office educators to respond to new ways of conceptualizing learning. The complex interplay of organizational culture and the inherently social nature of learning asks for more interpretative approaches in research that seeks to support successful organizational participation. This research study is an attempt to respond to this need in a way that is conceptual sound.

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Curiosity: Its Role and Implications in Informal Workplace Learning

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Little information exists about the possible role of curiosity in informal workplace learning. In this study, 233 adults took three curiosity instruments and a modified version of an instrument designed to determine levels of socialization-related learning in the workplace (a kind of informal learning). Significant positive relationships were found indicating curiosity or the desire for information does play an important role in workplace learning, especially with new employees. Implications for adult learning and organizational socialization theory and practice were discussed.

There is little question that learning extends beyond the confines of the classroom, especially into the work-related aspects of an individual's life (Wiswell, 1993). Much research has been done on organized learning through formal workplace learning endeavors such as training. Informal workplace learning (the kinds of learning that occur in a work setting, excluding formal, structured learning) is now receiving increased scholarly interest due to the recognition that many opportunities for learning arise daily and naturally (Watkins & Marsick, 1996). One significant example of informal workplace learning is the learning associated with the socialization process, the process through which employees "learn the ropes" of new jobs (Morton, 1993; Schein, 1988).

Curiosity, or the desire to gain information and knowledge, and thus learn (Berlyne, 1954), has been consistently tauted as a virtue of education (Berlyne, 1978) and a primary motivator and director of learning (Day, 1971, 1982; Driscoll, 1994). Yet, there has been little apparent interest in determining its role and importance in adult learning (Rossing & Long, 1981; Tucker, 1986). Tucker, interestingly, attributed this lack of attention to curiosity in adults to the common perception that children are by nature more curious. She further speculated that this perception is an extension of society's glorifying youth, ignoring the middle years, and abhorring old age. Rossing and Long believed the lack of research into adult curiosity has led to confusion and an ambivalence about curiosity's relevance to learning among adult educators.

Although curiosity has been mentioned in the literature as something important to plan for in formal training (e.g., Sonnenburg & Goldberg, 1992), no empirical evidence has been gathered to bolster these claims. In addition, the possible relationship between curiosity and informal workplace learning has not been explored.

The Purpose of the Study

Curiosity is considered to be an information-seeking process that directs and motivates learning (Berlyne, 1954, 1960, 1963). Since Deming (cited in Senge, 1993, p. 6) averred that people's "curiosity to learn" is destroyed as they mature, especially in the workplace, a more thorough understanding of the role and contribution of curiosity to learning, and informal workplace learning in particular, might help human resource practitioners design better organizational interventions. Such an understanding might assist these practitioners as they facilitate employee workplace adaptation or socialization and nurture an organizational climate in which learning is fostered. A clearer understanding of curiosity may also help learning theorists appreciate the need to account for curiosity in learning theory. Consequently, the purpose of this research was to investigate the possible interrelationships between curiosity and socialization-related learning in an effort to examine curiosity's role in one kind of informal workplace learning, the socialization process, and to consider its implications for the field of adult learning and organizational behavior.

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The Novelty Experiencing Scale (Pearson, 1970) is an 80-item scale, consisting of four 20-item subscales measuring novelty experiencing or the motivation for new experiences. The tendency to seek novelty is broken down into four scales on the basis of the source of stimulation and the type of subjective experience. The source of stimulation can be internal or external to the individual, while the subjective quality of the experience is either cognitive or sensational. Pearson combined these classifications into a 2 x 2 model, yielding four forms of the tendency toward novelty experiencing: External Cognitive, Internal Cognitive, External Sensation, and Internal Sensation. Alpha coefficients were .90, .83, .85, and .83, respectively.

The Sensation Seeking Scale-Form V (Zuckerman, 1979) is a 40-item scale designed to measure sensation seeking. The test consists of four factor subscales: Disinhibition, Boredom Susceptibility, Thrill and Adventure Seeking, and Experience Seeking. Zuckerman, Ulrich, and McLauglin (1994) defined sensation seeking as "...the need for varied, novel, and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experiences" (p. 563). The Disinhibition subscale represents the seeking of sensation stimuli through sexual activity, partying, and drinking. Boredom Susceptibility reflects a low tolerance for boredom and restlessness when there is a lack of varied stimulation in the environment. Thrill and Adventure Seeking describes the desire to seek sensation stimuli through unusual or sometimes risky physical activities like mountain climbing. The fourth subscale, Experience Seeking, measures the seeking of unusual experiences and sensations and the unconventionalness of an individual's lifestyle. Alpha coefficients for the four subscales were .81, .77, .86, and .75, respectively.

Socialization-related learning was determined by a modified version of the Workplace Adaptation Questionnaire (Morton, 1993). It is a self-reported, 22-item instrument, consisting of three subscales developed to measure employee socialization-related learning and one subscale that measures satisfaction with learning experiences. The four subscales are as follows: Job Knowledge, Acculturation to the Company, Establishing Relationships, and Satisfaction with Learning Experiences. Job knowledge refers to the extent respondents report mastering the tasks of their jobs and consists of eight questions. Acculturation to the company is a five-item subscale that measures the extent to which employees learned the norms, values, and culture of their organizations. Establishing Relationships, the third subscale, contains five items that assess the employees' ability to identify coworkers who could provide useful information or who know their way around the organization. Lastly, the four-item Satisfaction with Learning Experiences subscale evaluates employees' satisfaction with their learning experiences at the organization. Cronbach's alpha internal consistency reliabilities were, respectively, .96, .86, .85, and .81. For the purpose of this study, the Satisfaction with Learning subscale will not be examined.

Procedure. The tests were administered at the participants' places of work. The three companies, all operating in the suburbs of Washington, D.C., participated only on the condition of anonymity and were informed of the results. The purpose of the study was first explained to each subject, and the measures were then distributed, with an average administration time of 35 minutes per individual.

Results

Table 1 shows the means and standard deviations for each of the 10 curiosity subscales and three socialization-related learning subscales.

Table 2 presents the correlations between all 10 curiosity dimensions and the three socialization-related learning dimensions. Of special interest is the moderate positive and significant relationships between all of the Workplace Adaptation Questionnaire subscales and the Melbourne Curiosity Inventory subscales. The Novelty Experiencing Scale's Internal Cognitive, Internal Sensation, and External Cognitive subscales were all positively and significantly related to the Job Knowledge subscale as well. The only significant correlation between any of the Sensation Seeking Scale and Workplace Adaptation Questionnaire subscales was a negative one between Thrill and Adventure Seeking, Experience Seeking, and Acculturation. A possible interpretation of this would be that newhires are a bit more reserved and introspective (i.e., they are on their best behavior) when they are learning the norms and procedures of their new organization. At this time, they are still "feeling their way around." It may also be that the three company cultures represented in this study discourage such behavior.

Table 1
Mean Scores and Standard Deviations of Subscales*

Subscale	M	SD
Job Knowledge	33.3	4.4
Acculturation	19.0	3.5
Establishing Relationships	21.2	3.0
Melbourne State Curiosity	58.5	11.5
Melbourne Trait Curiosity	60.8	10.0
External Sensation	11.9	4.8
Internal Cognitive	13.3	5.4
Internal Sensation	10.9	4.5
External Cognitive	11.0	4.7
Disinhibition	47.3	10.2
Boredom Susceptibility	52.6	11.7
Thrill and Adventure Seeking	43.6	11.8
Experience Seeking	52.5	10.1

*Note. N=233

Table 2
Interrcorrelations Between Workplace Adaptation Questionnaire and Curiosity Subscales*

	JK	AC	ER	MS	MT	ES	IC	IS	EC	DS	BS	TS	EX
JK	—	**.42**	**.37**	**.31**	**.34**	-.06	**.34**	**.23**	**.16**	-.04	-.07	-.11	.02
AC	—	—	**.43**	**.31**	**.27**	-.08	.10	-.02	.02	.03	-.08	**-.19**	**-.13**
ER	—	—	—	**.22**	**.22**	-.02	.10	.08	.03	.09	-.04	-.03	.03
MS	—	—	—	—	**.79**	-.03	**.42**	.15	**.29**	-.10	-.10	.07	.01
MT	—	—	—	—	—	.04	**.44**	**.18**	**.38**	.01	-.02	.10	.05
ES	—	—	—	—	—	----	.04	**.26**	**.29**	**.24**	.04	**.64**	.10
IC	—	—	—	—	—	----	----	**.48**	**.62**	**-.17**	**-.19**	.08	.16
IS	—	—	—	—	—	----	----	----	**.48**	**.19**	.09	**.20**	**.32**
EC	—	—	—	—	—	----	----	----	----	-.11	**-.14**	**.18**	**.18**
DS	—	—	—	—	—	----	----	----	----	----	**.47**	**.13**	**.22**
BS	—	—	—	—	—	----	----	----	----	----	----	-.01	**.33**
TS	—	—	—	—	—	----	----	----	----	----	----	----	**.16**
EX	—	—	—	—	—	----	----	----	----	----	----	----	----

*Notes. N=233 **Bold-faced print:** $p < .05$; for **r** > ± .17, $p < .01$, for **r** > .26, $p < .001$

JK = Job Knowledge
AC = Acculturation
ER = Establishing Relationships
MS = Melbourne State Curiosity
MT = Melbourne Trail Curiosity
ES = External Sensation
IC = Internal Cognitive
IS = Internal Sensation
EC = External Cognitive
DS = Disinhibition
BS = Boredom Susceptibility
TS = Thrill and Adventure Seeking
EX = Experience Seeking

Further analysis through regression techniques indicated that several of these subscales would be useful in a model for determining whether curiosity significantly contributes to socialization-related learning and thus the socialization process. The scores of the three Workplace Adaptation Questionnaire subscales were summed (M =71.9; SD = 8.5), and this total score became the dependent variable in the regression model. The three curiosity subscales significantly correlated to the total Workplace Adaptation Questionnaire score (Melbourne State Curiosity, Melbourne Trait Curiosity, and Internal Cognitive; r = .38, .41, and .25, respectively) were all then included as independant variables in a regression equation. The R^2 for the regression model was .182, i.e., curiosity explained a significant and meaningful 18.2 percent of the variance ($p < .001$) in socialization-related learning. Therefore, curiosity's predicted relationship and contribution to socialization-related learning and informal workplace learning was supported.

Discussion

The process of becoming socialized into an organization is a complex one. Newcomers require a certain amount of verve and a considerable desire to learn for there to be any hope of a favorable socialization outcome.

The results of this study upheld the notion that curiosity indeed plays a significant role in socialization-related learning and thus the socialization process in general. Newcomers need and use curiosity to help them learn their interpersonal and technical requirements of their jobs. An individual's curiosity or desire for information and knowledge motivates and directs information-seeking activities such as asking questions, observing, thinking, reflecting, reading, writing, and learning by trial and error to alleviate their sense of uncertainty about how to perform their jobs and how to define exactly their respective roles in their organizations. By successfully employing these curiosity-induced behaviors, newcomers are much more likely to learn their jobs quickly and properly, and adapt to their organizations overall. Ultimately, turnover declines, and the organization benefits.

Implications for Theory and Practice

The findings of this study could benefit those interested in educating adults. The field of adult education should gain by an understanding of the relevance of curiosity in adult learning contexts. Curiosity is not simply a phenomenon of our youth; it is alive and well in adult learning contexts like the workplace. It is important in that it motivates and directs information seeking and knowledge acquisition in almost all kinds of learning.

As adult educators, trainers should be encouraged to incorporate more curiosity-inducing stimulation into training endeavors. As adult learners' interests are aroused, problems would be explored in greater depth, creativity would be inspired, and learning would be much more likely to be transferred and used on the job. Stimulating curiosity could also foster a workplace atmosphere of learning, which, in turn, may enhance organizational commitment by employees and possibly improve a company's capacity to adapt to the demands of an ever-changing work environment.

Moreover, the empirical evidence offered here may provide some evidence of the importance of intrinsic motivators, like curiosity, in the andragogical model (see Reio [1996] for a fuller explanation).

Socialization theorists should gain from the knowledge that it is curiosity-induced behaviors that at least partly drive the socialization process. Curiosity or information seeking is vital to new employees' mastering required interpersonal and technical skills and adapting to their organizations. Without at least some measure of learning success, the newcomers' socialization and retention could be in jeopardy. Thus, the relevance of curiosity and the behaviors it motivates should be more fully researched as they relate to the socialization process. Curiosity is very relevant, but more research is needed to more fully explain all of its possible roles.

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Outcomes associated with being a mentor: Who benefits from being a mentor?

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While mentoring is considered an invaluable development tool for newer employees and during early career (e.g., Kram, 1983), we still know little about it. This study addresses the need to examine outcomes associated with being a mentor and what predicts them. The relationships between five clusters of mentor benefits and mentor and relationship characteristics were examined. Results shed early light on who benefits from being a mentor and in what type of relationship.

Mentoring in the workplace has been associated with attractive outcomes for mentees. Growing literature suggests that those who have been mentored tend to have more information about the organization (Ostroff & Kozlowski, 1993); more promotion opportunities (e.g., Fagenson, 1989; Dreher & Ash, 1990; Bachman & Gregory, 1993; Kirchmeyer, 1995); greater job satisfaction (e.g., Koberg, Boss, Chappell & Ringer, 1992; Dreher & Ash; Fagenson, 1989); and greater recognition within the organization (Fagenson, 1989). Academicians and practitioners alike sing the praises of having a mentor.

Few have theoretically or empirically considered outcomes associated with *being* a mentor. Indeed, the traditional definition of mentoring suggests that the relationship is intended to benefit the mentee. A recent definition describes mentoring as

> "a one-to-one relationship between a more experienced member (mentor) and a less experienced member (mentee) of the organization or profession. The relationship is developed to promote the professional and personal growth of the mentee through coaching, support and guidance. Through individualized attention, the mentor transfers needed information, feedback and encouragement to the mentee as well as providing emotional support and 'putting in a good word' when possible" (Mullen 1994; p. 259).

The intent of the mentoring relationship, to promote the personal and professional growth of the mentee, is clear. Yet the mentor may stand to gain as well. It has recently been suggested that the mentoring relationship is actually more of an exchange of information than has (Mullen, 1994).

A few authors have described potential benefits of being a mentor, but few have been empirically tested. Zey (1984) suggested four primary outcomes of being a mentor: 1) career enhancement; 2) intelligence / information; 3) advisory role; and 4) psychological rewards. Hunt and Michael (1983) suggested that mentors gain satisfaction and self-confirmation, while Bushardt, Moore, and Debnath (1982) asserted that the "young protégé can flatter his/her mentor in order to feed the mentor's vanity" (p. 49). Recent empirical work indicates that mentors seek information from their mentees (Mullen & Noe, 1996), consistent with Noe's (1988) assertion that mentors may avoid technical obsolescence by gaining new information from their mentees.

Ragins and Scandura (1993) recently reported that they found intentions to serve as mentors to be positively linked to *expected* benefits and negatively linked to expected costs. It was also found that individuals with experience as a mentor reported stronger intentions to mentor in the future, and anticipated fewer drawbacks to the mentoring role (Ragins & Cotton, 1993). McKenna (1988) categorized mentor benefits (or outcomes) into four dimensions: 1) professional; 2) personal esteem; 3) skill; and 4) relationship. Mentors in her study reported benefits in all four areas, but largely in the relationship dimension. To summarize, ten broad categories of benefits of

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being a mentor have emerged, although these remain largely untested:

1. Intrinsic satisfaction in helping the mentee grow; legacy (e.g., Burke, 1984; Kram, 1985);
2. Extrinsic recognition and power (e.g., Zey, 1984);
3. Improved interpersonal skills and knowledge (e.g., Krupp, 1987);
4. Sense of self-worth/self-esteem (e.g., Zey, 1984);
5. Friendship and loyalty (e.g., Burke, 1984; Shaw, 1989);
6. Idea stimulation and testing (e.g., Reich, 1986);
7. improvement of subordinate performance; task delegation/workload easing (e.g., Burke, 1984; Zey, 1984; Noe, 1990);
8. Insight into others' needs (e.g., Newby & Heide, 1992; Zey, 1984);
9. New information (e.g., Noe (1988); Newby & Heide, 1992; Zey, 1984); and
10. Organizational compensation.

Research Questions

Based on the earlier literature which at least suggests potential outcomes that may be associated with being a mentor, the current study began to investigate the following issues:

1. Are the outcomes or benefits of being a mentor described above actually experienced by mentors?
2. With what characteristics of the mentor are the benefits of being a mentor associated?
3. With what characteristics of the mentoring relationship are the benefits of being a mentor associated?

Mentor Characteristics

Age Consistent with Noe's (1988) assertion that serving as a mentor can help a senior employee avoid skill obsolescence by providing him/her a source of new information (i.e., the mentee). Largely because it was assumed older mentors typically had more to gain, it was expected that the mentor's age would be positively related to benefits of serving that role: Hypothesis 1: Benefits of being a mentor will be positively associated with the mentor's age.

Gender The mentee's gender, the mentor's gender, the gender composition of the relationship (i.e., same sex vs. cross sex) and gender role orientation have all been examined to some extent. As far as mentee's gender is concerned, women are reported to perceive more barriers to having a mentor than men do (e.g., Noe, 1988; Ragins & Cotton, 1991), but this has not necessarily been substantiated in terms of actual numbers of men and women with mentors (Dreher & Ash, 1990). Horgan and Simeon (1990) did find that mentoring relationships last longer for male mentees and tend to result in larger effects on income than for female mentees. Mullen and Noe (1996) found that mentor gender did not significantly impact information seeking by mentors. ***Willingness*** to mentor among men and women has been found to be equivalent, although women anticipate more drawbacks to becoming a mentor (Ragins & Cotton, 1993). Researchers have also begun to look at gender composition of mentoring relationships, revealing few differences between same-sex and cross-sex mentorships (Burke & McKeen, 1995; Olian, Carroll, Giannantonio, & Feren, 1988; Clawson & Kram, 1984).

This study examined mentor gender as it relates to the benefits he/she receives. Because female employees may perceive more barriers to promotional opportunities and may experience a "glass ceiling" effect, it was expected that they had more to gain from serving as mentors: Hypothesis 2: Benefits of being a mentor will be greater for female mentors than for male mentors.

Organizational Tenure Although little or no relevant empirical work exists, the current researcher expected to find a positive relationship between the mentor's organizational tenure and the benefits he/she experiences, because the mentee potentially brings a new perspective that someone embedded in the organization may not have otherwise seen: Hypothesis 3: Benefits of being a mentor will be positively associated with the mentor's organizational tenure.

Mentor Self-monitoring As defined by Snyder (1974), high self-monitors exhibit high attentiveness to external cues and act according to those cues. Low self-monitors are defined by low attentiveness to external cues, relying on internal cues to guide their behavior. Although self-monitoring did not impact mentor information seeking in a recent study (Mullen & Noe, 1996), it was expected in this study that high self-monitoring mentors would be more attuned to the cues they receive from their mentees and, thus, stand to gain more from the relationship: Hypothesis 4: Benefits of being a mentor will be positively associated with mentor self-monitoring.

Relationship Characteristics

Time Spent Together The time mentors and mentees spend together has not been systematically examined, but was considered in this study as an important correlate of outcomes for mentors. It was expected in this study that the more time mentors spent (i.e., per month) with their mentees, the more likely they would be to benefit from that relationship: Hypothesis 5: Benefits of being a mentor will be positively associated with the amount of time he/she spends with his/her mentee.

Mentoring Functions According to Kram (1983), mentors serve two primary functions: 1) vocational functions that assist the mentee with career and professional development; and 2) psychosocial functions that help the mentee grow personally and to gain friendship. Kram suggests that the most intense mentoring relationships are marked by both vocational and psychosocial functions. Thus, it was expected in the current study that mentors would benefit more when both functions were being performed: Hypothesis 6: Benefits of being a mentor will be positively associated with the mentor's performance of psychosocial and vocational mentoring functions combined.

Methodology

Participants Mentors from assigned and nonassigned relationships in 17 Midwestern firms participated. A variety of jobs were represented, from executives to engineers to underwriters to human resource staff. The response rate was nearly 10 percent (i.e., 161 of 1647 surveys).

Surveys Mentors participated by completing a paper and pencil survey, including existing measures as well as newly developed measures where none existed. Participants were asked to refer only to one mentoring relationship, the most recent or the most intense. Follow-up reminders were not possible, since the researcher was not able to identify those who received the surveys. Confidentiality was strictly maintained.

Measures

Mentor Characteristics. The mentor's age, gender, and organizational tenure were solicited through single-item, direct questions. Self-monitoring was measured via nine applicable items from Snyder's (1974) Self-monitoring scale ($\alpha = .88$).

Relationship Characteristics. Time spent together was measured by asking the mentor how much time (in hours) he/she spends with his/her mentee per month. The vocational and psychosocial mentoring functions were measured via Noe's (1988) 21-item scale with Likert scale responses. Seven of the 21 items measured vocational functions ($\alpha = .91$); 14 of the items measured psychosocial functions ($\alpha = .90$). Relationship phase was measured via a single item, based on Chao and Kozlowski's (1992) item and developed for this survey requiring the mentor to check the statement that best described his/her mentoring relationship.

Benefits of Being a Mentor. The categories of outcomes that have been linked with serving as a mentor were developed into 20 items for this study, since no such scale existed. These items included, "To what extent have you groomed your mentee to move up in the company as you have?" and "To what extent have you sought information from your mentee?"

Data Analysis Strategy Descriptive statistics were computed for each of the variables. Correlation coefficients were computed to reflect the extent of association among the variables; reliability coefficients were computed as an indication of the extent to which scale items were internally consistent.

The benefits were grouped into factors based on the results of a factor analysis with no factors specified and Varimax rotation. Canonical correlations were then computed, using the benefit factors as the dependent variables and the independent variables described above to test Hypotheses 1 through 6 simultaneously. The Canonical method was appropriate because of the involvement of a multiple-factor set of dependent variables and multiple independent variables.

Results

Table 1 holds the descriptive statistics. The typical mentor (i.e., the mean) was 42 years of age, male (72%), held a bachelor's degree, had been with the organization 13 years and in the job title for 5.25 years. Correlation coefficients and alpha coefficients are found in Table 2. The alpha coefficients suggest that the multiple-item scales used were rather consistent internally, with values ranging from .88 for the Self-monitoring scale (Snyder, 1974) to .91 for the vocational mentoring functions subscale (Noe, 1988). They appear in the diagonal of Table 2.

Mentor Benefit Factors As a result of factor analysis with Varimax rotation of the 20 benefit items, five underlying factors emerged. The factors appeared to represent the following five categories of benefits: 1) Feelings of worth; 2) Recognition by others; 3) Using the mentee as a resource; 4) Leadership development; and 5) Compensation by the organization. These factors were treated as the interrelated dependent variables in the Canonical correlations that tested Hypotheses 1 through 6 (see Results below). Pearson Correlation coefficients (see Table 2) support the notion that these categories of benefits are highly interrelated and should, therefore, be treated as such.

Testing Hypotheses 1 through 4 Pearson correlation coefficients indicate that select independent variables were related to select mentor benefit factors (see Table 2). The separate

Table 1. Means and Standard Deviations: Independent and Dependent Variables

Variable	Response Scale	N	Mean	Std. Dev.
Benefit 1 (Self-worth)	1 = to a very small extent 2 = to a very large extent	139	3.94	0.73
Benefit 2 (Recognition)	1 = to a very small extent 2 = to a very large extent	139	2.53	0.89
Benefit 3 (Resource)	1 = to a very small extent 2 = to a very large extent	139	3.31	0.88
Benefit 4 (Leadership)	1 = to a very small extent 2 = to a very large extent	139	3.13	0.82
Benefit 5 (Compensation)	1 = to a very small extent 2 = to a very large extent	139	1.74	1.07
Age	In years	139	42.36	8.62
Education	1 = high school; 5 = grad degree	139	3.17	1.32
Self-monitoring	1 = True; 2 = False	139	0.41	0.20
Psychosocial Functions	1 = to a very slight extent 2 = to a very large extent	122	3.61	0.64
Vocational Functions	1 = to a very slight extent 2 = to a very large extent	122	3.27	0.97
Time Spent	In hours	122	27.43	36.61

Table 2. Correlation and Alpha Coefficients for Dependent and Independent Variables

Variables	Ben.1	Ben.2	Ben 3.	Ben 4	Ben. 5	Age	Gender	Tenure	Self-mon.	Time Spent	Psycho.	Vocat.
Dependent												
Benefit 1												
Benefit 2	.46***											
Benefit 3	.58***	.44***										
Benefit 4	.53***	.53***	.56***									
Benefit 5	.28***	.43***	.20*	.28***								
Independent												
Individual												
Age	.32***	.02	.09	.06	.06							
Gender	.03	.04	-.16*	-.10	-.08	-.12						
Tenure	.21**	-.01	.09	.04	-.09	58***	-.13					
Self-monitor	.10	-.11	.04	.01	.07	-.10	-.08	(.88)				
Relationship												
Time Spent	.11	.14	.23**	.31***	.18	-.12	-.05	.02	.04			
Psychosoc. Functions	.65***	.41***	.40***	.39***	.23**	.33***	-.02	.18*	.02	-.02	(90)	
Vocational Functions	.50***	.35***	.69***	.42***	.17*	.18*	-.14	.16*	-.02	.18*	.55***	(.91)

N = 139; * p < .05; ** p < .01; *** p < .001; Alpha coefficients for multiple-item scales appear in parentheses.

correlations support a positive relationship between age and feelings of self-worth (Benefit 1) and between tenure and feelings of self-worth (Benefit 1), but do not support the hypothesized relationship between gender and mentor benefits. Results of the Canonical correlation including the five factors of mentor benefits as the dependent variables and the mentor characteristics as the independent variables appear in Table 3. These results indicate that the combined mentor individual differences are significantly related to the mentor benefit factors, supporting this study's assertions. Hypotheses 1 through 4 received general support, with the support for any one hypothesis being relatively weak.

Testing Hypotheses 5 and 6 Pearson correlation coefficients suggest that there are relatively strong relationships between the separate mentor benefit factors and the separate relationship characteristics. Time spent with one's mentee was related to using the mentee as a resource (Benefit 3), developing leadership skills (Benefit 4), and organizational compensation (Benefit 5). The psychosocial and vocational functions were positively related to each of the five benefit factors.

Results of the Canonical correlation including the five factors of mentor benefits as the dependent variables and the relationship characteristics as the independent variables appear in Table 3. These results supported the relationship between the combined mentor benefits and the relationship characteristics and indicated that mentor benefits are more strongly related to relationship characteristics than to mentor characteristics. Hypotheses 5 and 6 were supported.

Discussion

It appeared from the patterns of significant Pearson correlations and the Canonical correlations that the relationship characteristics were more highly related to the mentor benefits than were the mentor individual differences. The strongest relationship appears to be between mentor benefits and serving the psychosocial and vocational functions. Mentors who served both functions tended to be the recipients of greater benefits than the mentors who didn't. Further, mentors who more time with their mentees tend to receive greater benefits.

Table 3. Canonical Correlations: Testing Hypotheses 1-6

Canonical Corr.	Adj. Canonical Corr.	Std. Error	Squared Canon.	F-value (P-value)
	Mentor Benefits with Mentor Individual Differences			
0.40	0.33	0.07	0.16	1.90 ($p < .01$)
0.30	0.26	0.08	0.09	1.18 ($p < .30$)
0.11		0.08	0.01	0.29 ($p < .94$)
0.02		0.09	0.00	0.02 ($p < .98$)
Wilks' Lambda	F-value 1.90 ($p < .01$)			
Roy's Greatest Root	F-value 5.06 ($p < .001$)			
	Mentor Benefits with Relationship Characteristics			
0.75	0.73	0.04	0.56	11.97 ($p < .001$)
0.54	0.52	0.06	0.29	6.83 ($p < .001$)
0.29	0.27	0.08	0.08	3.46 ($p < .05$)
Wilks' Lambda	F-value 11.97 ($p < .001$)			
Roy's Greatest Root	F-value 29.37 ($p < .001$)			

N = 139; * $p < .05$; ** $p < .01$; *** $p < .001$

Overall support was also generated for the relationship between mentor individual differences and mentor benefits through the canonical correlation, although the Pearson correlation coefficients suggest that the relationships between individual independent variables and the separate mentor benefits are not across the board (see Table 2). Among these variables, mentor age had the strongest association with any of the mentor benefit factors, namely the feelings of self-worth. It appears to matter most whether mentors are serving the psychosocial and vocational functions and how much time they spend with their mentees. This is encouraging, because these are factors the mentor can control. Apparently less important are the mentor individual characteristic, which are more stable and largely nonchangeable.

Separate correlation coefficients indicated that feelings of self-worth from mentoring (Benefit 1) were greater for older employees and those who had been with the organization longer. This is important to know, because we can encourage these individuals to be mentors. There was also a relatively weak link between gender and using the mentee as a resource (Benefit 3), such that female mentors were less likely to turn to the mentee as a resource. This was inconsistent with what was hypothesized.

The combined relationship characteristics were even more strongly related with the combined mentor benefits. Again, this is encouraging since these are factors within the mentor's control (i.e., psychosocial and vocational functions, and time spent with one's mentee). The separate correlation coefficients reveal that both the psychosocial and vocational functions were positively associated with each of the five mentor benefit factors. Time spent with one's mentee was positively related to using the mentee as a resource (Benefit 3), developing leadership skills (Benefit 4), and organizational compensation (Benefit 5). The more mentors served the psychosocial and vocational functions and the more time they spent with their mentees, the more likely they were to report receiving benefits from being a mentor. The implications for mentoring are positive: the mentor stands to gain from the mentoring relationship as well as the mentee. This makes mentoring seem even more valuable than has previously been suggested.

Limitations

One concern with this study is the relatively low response rate. Only 10% (i.e., 161) of the surveys were returned; 139 were usable for testing Hypotheses 1-4 while 122 were usable for testing Hypotheses 5 and 6. Response rates in this range do raise questions about sample representativeness. A contributing factor to the low response rate was the use of the surveys, for lack of a better vehicle, to identify mentors in the organizations. Many of those who received surveys may not have been mentors and were not suited for the study. The number of nonrespondents who were mentors versus nonmentors was unavailable, but this may be indicative of the difficulty of identifying mentors and measuring mentoring phenomena. Mentoring was defined more specifically in this study than it has been in other studies, which may also have lowered the response rate. Viswesvaran, Barrick and Ones' (1993) formula also suggests that the responses in this study were representative. The 10% response rate is close to the 13% rate computed via their Critical Response Rate (CRR) formula, using conservative estimates.

Another concern is the use of self-report survey as the single data source, introducing the potential threat of method bias contamination. Future work should investigate other data sources, although finding other vehicles for tapping mentors' perceptions will be challenging.

Future Research Directions

The issue of what a mentor gains from serving that role is an important one that needs to be pursued further. Future studies should consider comparing mentors and nonmentors, moving beyond looking solely at mentors. Academicians and practitioners seem to agree having a mentor is an important, if not essential, vehicle for professional development. But if we want to encourage senior members of the organization to serve as mentors, we need to also consider what outcomes they can expect.

Past references to outcomes of being a mentor have been largely anecdotal; much more empirical examination is needed. The current study began an investigation of benefits of being a mentor and what mentor characteristics and relationship characteristics are related to those benefits. It asked the questions, "Who benefits from being a mentor and how?" and "In what relationships do mentors benefit and how?" Other independent variables, beyond those included in this study, should be considered. The current study suggests that both individual differences between mentors and particularly relationship characteristics can predict outcomes received by serving as a mentor. While the study needs to be replicated and expanded to move this line of research beyond the exploratory stage, it offers some implications that are potentially very important for organizations and their senior (i.e., potential mentors) members. Knowing how mentors can benefit from serving that role, and under what circumstances, allows individuals and the organizations of which they are members greater opportunities to maximize the outcomes of mentoring, for mentors as well as mentees.

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The Impact of Organizational Sub-Cultures on Information Sharing: A Manufacturing Company's Dilemma

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This study examined the sub-cultures of a company involved in significant change and noted the effects of conflicting values on the organization's information sharing network. A qualitative study was used. From the data three themes emerged which reflected the stages through which managers and workers in the sub-cultures began improving their information sharing system.

With the increasing pressure to compete globally, organizations confront a plethora of new information that must be shared and distributed throughout the system. New goals, new strategies, new structures all stretch the limits of a company's information network. If the information system is historically weak, as many are (Huber, 1996), the company faces real difficulties in knowing where specific items of information are located and how to disseminate them.

This paper examines the information sharing system of a mid-sized global company that manufactures blood analysis instruments. Franklin Manufacturers (a fictitious name) has undergone dramatic strategic change efforts to compete successfully in the global market. Recently, the company was recommended for International Organizational Standardization (ISO) certification. To obtain full certification, corporate headquarters increased pressure on all departments to streamline their processes and function more efficiently. In addition, managers were warned that all departments had to follow the same standards as the Large Instruments Manufacturing Department (identified in the remainder of this paper simply as "Manufacturing"). Corporate heads pointed with pride at Manufacturing's self-directed work team, thought of as the most productive in the company. Team members from Manufacturing, interviewed in an earlier study (Powell,1996), reported that they felt completely free from external control in their decision making, that autonomy was encouraged and employee empowerment rewarded. My observations of the team and the department supported this perception. Information became available to workers when needed, and was disseminated openly. Even new information, which generally is more difficult and time consuming to disseminate and process (Huber, 1996), appeared to be handled in this department with little decrease in productivity. Unfortunately, workers from other departments had not been trained to be autonomous decision makers and did not feel empowered. As a result, these departments appeared unwilling or unable to make the changes necessary to emulate the practices of Manufacturing. These workers seemed to experience considerable difficulty in sharing new information. In my conversations with team members, supervisors and managers from the Manufacturing, Re-Manufacturing and Engineering Departments, I found three themes, or patterns, which continued to emerge: conflicting values, reframing cultures and unlearning. The purpose of my research was to determine how these themes impacted on the information sharing system of this organization.

Theoretical Framework

This study was grounded in the theoretical areas of organizational culture and information distribution. The grounded theory approach, formulated by Glaser and Strauss (1967) requires that data and theory be constantly compared and contrasted throughout the data collection and analysis process. In using this process, I found that the data revealed themes which appeared, then disappeared, re-appeared, shifted and then began to grow more clearly.

The themes emerged from organizational culture theory. An organizational culture "includes a pattern of basic assumptions developed by its members over time, thought to be valid and taught

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to new members as a correct way to perceive, think and feel" (Schein, 1990, p.111). From systems theory comes the premise that the organization, as a system, tends toward a kind of equilibrium and tries to reduce dissonance, bringing assumptions and beliefs into alignment with each other (Schein, 1990; Lewin, 1952). However, just as a system contains sub-systems, the organizational culture often develops sub-cultures which, in turn, create dissonance and disharmony. Each sub-culture develops its own communication network, over time, evolves into a unique subset of norms, assumptions and behaviors. The more dissonant or isolated a sub-system becomes from the main system, the more ineffectual are the processes by which information is distributed and disseminated. According to Huber (1996), information is most effectively retrieved when it is widely distributed in the organization. The more information is shared openly, the more learning occurs in individual units or departments. Simon (1996) supported this perspective: "What one person in an organization learns depends on what is already known by other organization members and what other kinds of information is available in the workplace" (p.176). Simon referred to this type of information sharing as internal learning and defined it as "transmission of information from one organizational memory or group to another" (p.176). However, when information is not widely shared, the organizational learning may be minimal. Some department members may experience a great deal of internal learning; others experience very little. At Franklin Manufacturing, the departments with the most effective information sharing system appeared to be the most successful in distributing and processing new information needed to effectively produce, service, market and repair new equipment. Other departments which historically had been left out of the information sharing loop, continued to be left out. In fact, some have argued (Huber, 1996; Isabella, 1990), the more technical and obtuse the information, the more traumatic are the effects of being left out. This is probably a result of common interpretations which develop (or, in the case of those left out of the loop, don't develop) from the processing of new information. Some of the diversity literature questions the need for common interpretations, pointing to the greater potential in creativity and richness in decision making options when there is more range and variation in the interpretations (Huber,1996). However, without shared understanding of a variety of interpretations, units may operate in isolation.

Research Questions

In a previous study (Powell, 1996), I asked team members from the Manufacturing and Re-Manufacturing Departments at Franklin Manufacturers to discuss how their team experiences affected their work lives. During the interviews, I found that the perceptions team members from Manufacturing had of their value to the organization differed greatly from those of Re-Manufacturing. The climate at Manufacturing was friendly and relaxed; department members were cheerful and positive. What's more, they believed that other departments at Franklin were similar. They spoke with pride of their managers' new "boundaryless" supervision practices (Bennett and O'Brien, 1994), which eliminated many of the policies and procedures associated with old hierarchical practices and chains of command. This Department had many of the characteristics of a learning organization which Bennett and O'Brien describe as having "woven a continuous and enhanced capacity to learn, adapt and change into its culture" (1944,p.41). However, no continuous learning practice can be totally effective in isolation. Although Manufacturing believed that the entire company operated from a learning organizational model, the reality, system-wide, was quite different. Prior to a rotation in managers, however, Re-Manufacturing workers were grim and secretive. They did not smile or greet each other. Most conversations among workers appeared to take place outside of the building, at lunch time or at breaks. And, although an informal communication network of sorts did exist within the department, members were unaware that their work climate was different from other departments, that the company had successful, supported self-directed work teams or that practices such as boundaryless supervision were in operation in other departments. Their perception was that Franklin Manufacturing was permeated by dictatorial managers who ruled every aspect of the workers' lives. As a consequence, department members felt helpless and entrapped.

My research questions for this study emerged from these conversations I had with team members. Soon after I had completed these team interviews, I became interested in a broader, more systemic perspective and began to include supervisors and managers in my interviewing. In addition, I had more conversations with department members of Engineering. I wanted to more clearly understand how such different work environments, or sub-cultures, could exist within the confines of one organization. What did their separate, and often conflicting existences suggest about the information sharing processes operating between the two departments? By including members of the Engineering Department, I wanted to determine if any other departments were as isolated from the organization's mission as Re-Manufacturing. The purpose of this study was to understand the relationship between disparate and isolated sub-cultures at a manufacturing company and the organization's information processing system. More specifically, how do conflicting sub-cultures impact on the success of the company's information dissemination efforts? How does the information sharing system affect the conflicting sub-cultures? Finally, how could the company integrate the experiences of one department into the organization's information system? What would have to occur to enable Franklin Manufacturing to truly become a learning organization?

Methodology

I selected fourteen workers and six managers to participate in this study. One of my assumptions was that the view of managers is crucial to understanding the effects of organizational change on the information network. Daft and Weick (1984) and Isabella (1990) have shown that managers play a crucial role in information processing by interpreting events and creating meaning for other department members. I asked the managers to describe their work environments and to compare and contrast them with those of other departments. Next, I asked them to discuss how information was distributed and shared in their departments. To discover the collective perspectives of other department members, I also interviewed five workers from Manufacturing, six from Re-Manufacturing and three from Engineering, none of whom I had talked with in the previous study. My interviews with them were quite similar to those of the managers. They discussed their perceptions of their work world, how their departments differed from others and how they received and shared information. All interviews were tape-recorded and transcribed verbatim so that the data could be systematically analyzed. In addition to the interviews, I observed the work environments of the three departments. The observational notes included numerous references to changes in how department members responded to organizational changes which affected their work lives.

I organized the data which emerged from the interviews and observations into the following categories, or themes: *conflicting values*, occurring when one department's norms and philosophy opposes those of other departments, *unlearning*, defined by Hedberg (1981) as the process through which learners discard knowledge. and *reframing culture*, the process of shifting or changing a sub-culture to reflect dominant organizational values. After completing the data collection, and reviewing each interview transcript, I selected sections of the interviews which were repetitive and indicated patterns or themes. I recorded these sections on separate sheets of paper and then coded them into the categories identified above. To obtain verification of my coding procedures, I had two independent reviewers code most of the data. The reviewers assigned twelve of the fifteen sections of verbatim transcripts to the same categories I had selected. I then examined the coded categories and their relationships with each other for patterns or themes that would help me understand the frequency of these categories. Organization members from Franklin Manufacturing also assisted in this process.

Results

The data from this research revealed an organization in transition. The three categories into which I coded the data reflect dominant themes which are grounded in organizational culture and

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information sharing theory. The themes can be characterized as stages in this company's struggle through this transitional process as it relates to the information sharing system. I have used each of these stages as historical markers to discuss the results of this study.

Conflicting Values The ineffectual information sharing process at Franklin was closely related to the contradictory norms and values emerging from some of the more isolated departmental subcultures such as Re-Manufacturing and Engineering. Communication patterns developed over time resulted in a "broken information loop", as a former Engineering manager described it, with some departments receiving all the information they needed all of the time and others receiving very little information most of the time. For example, department workers in Manufacturing assured me that "since they {their managers} know that we need to know what we need to know to solve all the problems they give us, they're going to make sure we have whatever it is we need to find a solution." None of them could recall a time when they could not obtain information they needed. At Re-Manufacturing, however, three managers, all of whom had been transferred there within the past few months, described the equipment, technical processes and information gathering system as "prehistoric". They felt that the workers had learned to "milk the system" to handle their frustration at "not being allowed to do their job right". Department workers confirmed this perception when I spoke with them. In addition to complaining about the lack of resources or support they had received from their former managers to do their jobs, they had little knowledge of the technical support and resources available to workers in other departments. In fact, they seemed unusually unaware of the achievements, both collective and individual, of their co-workers in productive departments such as Manufacturing. Clearly, the differences among the departments' cultures produced conflicting norms. Manufacturing's democratic management style encouraged autonomous decision makers. Re-Manufacturing's directive style produced workers who had become dependent, passive and manipulative. Engineering had developed a third, and equally as contradictory, set of norms. "We encouraged our people to be separate, to see themselves as different...even as better, because everyone relied on us. But maybe that wasn't such a good idea because people got jealous and kept us out of the decision making," reported a former Engineering manager. Workers from this department commented on the sense of isolation they felt from the rest of the organization and how little they knew about new processes and new techniques developed by Manufacturing "until they have to let us know. That's the problem for us, I think. They have to share information with us but they don't like us so they don't tell us anything until they have to....and they don't include us in on the decision making plans."

Unlearning When Franklin was recommended for ISO certification, the company began an organization-wide training and development effort. During the process, corporate heads recognized the disparity in production levels between departments and, to some extent, the "broken information loop", which prevented many organization members from obtaining valuable problem solving information. Consequently, with the pressure to retain certification, division heads have been warned to do whatever is necessary to bring their departments up to ISO standards. One of the first strategies employed by division heads has been to switch former Manufacturing and Engineering managers to Re-Manufacturing and, in one case, a Manufacturing manager to Engineering. Three of the managers I interviewed who had recently been transferred to Re-Manufacturing described the climate there, as "prehistoric" and "like working with a bunch of dinosaurs". These perceptions have impacted heavily on the workers, many of whom have become aware for the first time of how they are perceived in other departments. Unlearning is analogous to Lewin's concept of "unfreezing," the term used to describe the first felt need for change (1951). Unlearning and unfreezing open the way for new learning to take place, a stage essential for organizational change. I included the following comments of a Re-Manufacturing worker under the Unlearning theme: "This place is like Siberia. It's like we don't count. Nobody tells us anything. Well, we just can't put up with this any longer." Another worker said he thought "we need to be more like Manufacturing...to come together more...you know, to meet more. These guys {the new managers} tell us that they want us to meet without them more and decide things on our own more. Yeah, but if we screw up, then what?" The distrust and frustration expressed by this worker suggests another effect of unlearning. Because this department is giving up its previous script, or set of acceptable behaviors, it becomes nearly somewhat paralyzed, temporarily, while a new script is being written (Huber, 1996). For workers and managers alike, this is a very frustrating process. Productivity slows down as managers encourage risk taking to develop new behaviors. "We have to tell them it's okay to make mistakes. And it is. But when they make them, everything slows down to a halt," one manager commented. Clearly, the Unlearning stage is an uncomfortable one for workers and managers, alike. It is, however, the first indication that organization members recognize a need for dramatic change in their work lives.

Reframing Cultures This theme, or stage of development, is similar, in Lewin's change model, to "moving". Moving is the implementation stage, where activities and events clearly show that change is occurring. Isabella (1990) believes that symbolism is an important part of this stage, where new norms and behaviors are learned and a culture is shifted. One example of a symbolic message I heard repeated by managers in all three departments was the phrase "Let me play golf." Managers in Manufacturing used this phrase to illustrate their management style: "My team knows what to do. They don't have to come to me. They make their own decisions and I get to play golf." At Re-Manufacturing the expression has become indicative of the goal managers have set for their workers. One manager reported that he tells his workers every day "Your job is to make my job look easy. You solve all the problems and I get to play golf." Isabella (1990) suggests that once an established routine has been disrupted, "managers search their surroundings for clues from which to derive new meaning or reconfirm old understanding, and symbols provide that valuable information. Symbols bring double exposures into focus" (p.25). Another symbolic phrase members used to describe necessary change in the information sharing system was "opening the loop." A former Engineering manager, now in Re-Manufacturing, said "We have to get them {Manufacturing and Corporate} to open the loop. It was the same there {Engineering} as it is here. We aren't in the loop. The loop's gotta get fixed. We'll just have to make them open it up to us."

Implications

The themes from this study have several implications for HRD professionals in their role as organizational change agents. First, managers at Franklin clearly need expertise in "fixing the loop." The frustration expressed by the manager from Engineering, that he would "just have to make them open it {the information network} up to us" is illustrative of the lack of training in implementing cultural change and improving internal communication lines. Mink (1994) suggests training managers in dealing with confrontation and collusion and publishing a company newsletter designed specifically to share information about new equipment and techniques. Secondly, HRD professionals are essential for enlisting the support of top level executives for organizational change. As one of the new Re-Manufacturing managers said: "Nothing major is going to happen until Corporate wants it to happen. We can improve the quality of this department a little but we're never going to get the help from the rest of Franklin until everybody is committed to this. And nobody's going to give up the way they do business...or communicate... until Corporate says they have to." To transform this company into a learning organization, Franklin needs a common language and common mental models, cutting across the subcultures of the organization. The HRD profession is specifically designed to lead such an effort.

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Team Learning Consultation: Pilot Study of an Alternative to Process Consultation

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This study explored team learning consultation as an alternative to process consultation to guide team-based interventions. It provides preliminary evidence that this model offers a practical and usable template for enhancing team level learning. It suggests that increased preparation, training, and support of both team members and team learning consultants may be needed to fully realize the framework's potential. The study also identifies typical team responses to the team learning process and explores their implications for the effective deployment of the team learning consultant role.

Background and Theoretical Framework

For three decades, process consultation has provided an influential conceptual framework to guide interventions designed to increase team effectiveness (Schein, 1969). The process consultant purposefully avoids contributing subject expertise or influencing the content of team decisions and solutions. Instead, the consultant focuses almost exclusively upon the team's process. Typical interventions include assisting teams to clarify goals, roles, agendas, and decision-making processes; to build team trust and cohesion; and to reduce interpersonal conflict. Process consultants are careful in choosing when to intervene, many operating by the guideline, "if you aren't sure whether to intervene, don't."

Recently, interest has grown in the role of teams as vehicles for organizational learning. Senge identifies teams, both formal and informal, as the "key learning units in organizations" (1990, p. 236). The organizational learning literature has speculated that a framework other than process consultation may be required to assist a team with its learning process. It suggests that, when compared with process consultation, a more active and confrontational approach may be required. A team may not want help or be aware of the help it needs, given the "defensive routines" that are often exhibited limiting deeper levels of questioning and learning. Moreover, the process consultant's focus on building cohesion and reducing conflict may limit the use of interventions that help a team question assumptions and maintain levels of creative tension needed to maximize team learning.

This paper describes the third in a series of studies designed to examine the role of the team consultant from an organizational learning perspective. This research began with the following questions:

- To what degree does the process consultation model provide a relevant framework to guide interventions designed to enhance team learning?
- Would an alternative framework to process consultation be a more effective approach to guiding team learning interventions? If so, what would be the key defining features of such a framework?

Study #1. A preliminary study (Jeris, May, and Redding, 1996) used the Redding and Catalanello (1994) strategic learning cycle model to examine the learning processes of three teams in three separate organizations. According to this model, the team learning process can be represented as a learning cycle comprised of three phases: planning, implementing, and reflecting. (See Figure 1.)

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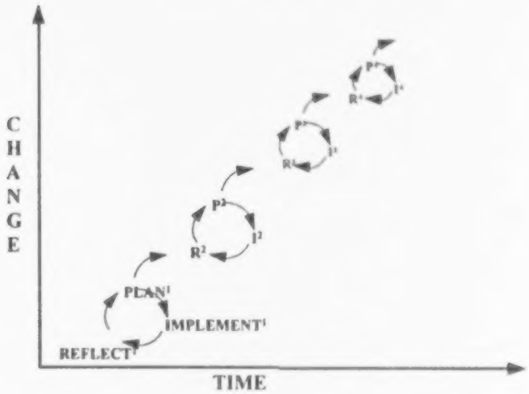
Figure 1. The Relationship of Organizational Learning Cycles to Organizational Change



Three factors are felt to determine the degree of organizational change that occurs over a period of time: speed, depth, and breadth. *Speed* refers to the number of cycles that occur over a given period of time. *Depth* refers to the transformational quality (or "double-loop" learning) that occurs as a result of each learning cycle (Argyris & Schon, 1996). *Breadth* refers to the degree to which the learning process impacts the organization as a whole system.

In the preliminary study, teams were provided with team consultants who possessed considerable background and experience as process consultants. Throughout the process, the researchers gathered data that allowed them to make assessments of the speed, depth, and breadth of learning in the three teams. Among the study's conclusions were the following:

1. Each team missed many opportunities to increase the speed, depth, and breadth of learning.
2. Teams were either unaware or unwilling to ask for help from team consultants.
3. Process-oriented consultants often chose not to intervene with teams at times and in ways that may have helped teams to learn.

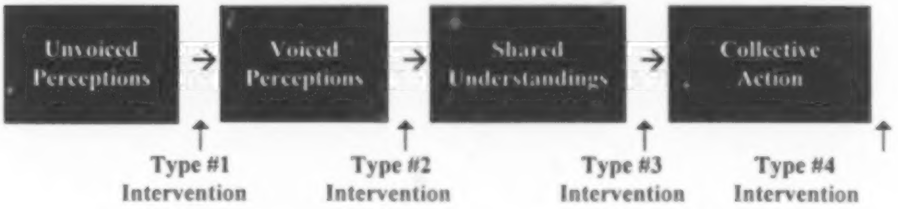
This study led to two conclusions: 1) teams needed external assistance to maximize the levels of team learning; 2) process consultation did not provide an adequate framework to guide interventions to enhance team learning.

Study #2. The second study sought to define the parameters of an alternative framework to process consultation as a model for team-based interventions. Using a grounded theory methodology, each of the "missed opportunities" for learning identified in the preliminary study were categorized as follows:

Missed Opportunity #1	Team members possessed perceptions about the direction of team activities that they never voiced to the team.
Missed Opportunity #2	Team members expressed concerns about the direction of team activities, but these perceptions were not integrated into new understandings of the situation by the team.
Missed Opportunity #3	Team members were able to create a new shared understanding of the situation. However, no new actions were taken that reflected the new understanding.

Based on these categorizations of missed opportunities, the study identified four separate types of interventions that appear to have the potential to increase the speed, depth, and breadth of team learning. (See Figure 2.)

Figure 2. Team Learning Consultation Interventions



Type 1 Interventions: From Unvoiced Perceptions to Voiced Perceptions. Type 1 interventions focus on encouraging the public expression of perceptions, questions, and concerns about the team's direction that are not being voiced and that are important to its future learning.

Type 2 Interventions: From Voiced Perceptions to Shared Understandings. Type 2 interventions are directed toward helping the team incorporate individual perspectives into new, collectively shared understandings of the situation at hand.

Type 3 Interventions: From Shared Understandings to Collective Action. Type 3 interventions are aimed to create a collectively endorsed plan of action that will be executed on behalf of the team. It is this action that will produce the knowledge and information needed for future learning.

Type 4 Interventions: Reflection on the Team's Learning Process. Type 4 interventions assist the team in reviewing its learning processes and identifying steps that can be taken to enhance future learning.

These four types of interventions form the basis of the "team learning consultation" framework, representing an alternative model for team-based interventions. When compared to process consultation, the adoption of the role of the team learning consultant was felt to require the modification of several operating guidelines for intervention. (See Table 1.)

Table 1. Process Consultation vs. Team Learning Consultation: A Comparison of Operating Guidelines

Operating Guidelines for Process Consultation	Operating Guidelines for Team Learning Consultation
• Interventions need to occur in a climate of trust and safety.	• The consultant may need to act even if a climate of trust and safety does not exist.
• Teams must want help and agree to this help through a formal "contracting" relationship.	• Teams may not want help or recognize the need for help.
• The consultant's role is to help the team accomplish what it wants to accomplish. The group is the client.	• The consultant's role is to build constructive tension that serves to question unstated assumptions.
• Teams should be given time to work things out on their own.	• The consultant cannot afford to miss opportunities to help teams learn even if this creates some discomfort. Some discomfort is both common and necessary.
• Interventions focus almost exclusively on interpersonal and decision-making processes.	• Interventions focus both on content and process and are designed to assist team in questioning underlying assumptions.
• Teams' readiness for intervention is determined by their stage of development. Interventions must occur at a "teachable moment."	• All moments are teachable.

Problem Statement

This paper describes a pilot study of the team learning consultant framework. It examines the degree to which this framework, when compared to traditional process consultation, provides a practical and usable setting to guide interventions that have the potential to enhance the speed, depth, and breadth of team learning. It also aims to explore the responses of teams to the team learning process and identify their implications for the team learning consultant.

According to the organizational learning literature, teams frequently exhibit complex defensive routines when faced with the need to question the "governing variables" (shared assumptions, mental models, etc.) that have guided their collective actions to date (Argyris & Schon, 199ℓ). These defensive routines act as unconscious conspiracies to "cover-up" undiscussable topics and "to cover up the cover up." Correspondingly, the literature describes the need for intensified levels of discomfort, conflict, ambiguity, and frustration to arise before teams are able to "discuss the undiscussable," to surface and question previously unchallenged assumptions, and to obtain breakthrough insights that result in the successful reframing of the presenting problem or issue.

The team learning consultation framework recognizes the potentially beneficial effects of tension, conflict, and frustration for the promotion of fast and deep learning. By seeking to surface the undiscussables and question previously unexplored assumptions, the team learning consultant's interventions may further sustain and intensify these tensions in order to overcome defensive routines and facilitate team learning. However, several possible professional and ethical dilemmas arise as a result. Could the team learning process evoke team responses that the team or the interventionist are unable to handle at the time? Are there certain levels of discomfort that surpass what is acceptable in a given context? Are there approaches (in terms of the way interventions are handled, the advance preparation of teams, the selection of and contracting with team members, etc.) that are necessary professional practices to reduce any destructive side-effects that might accompany the use of the team learning consultation framework?

Insights into potential team responses to team learning interventions are provided by the work of Bion (1959). Bion posited that the emergence of a group mentality or group mind might account for the disagreeable and often unproductive experiences of people in teams. Wells (1985) described this perspective as a focus on the group entity. He noted that it assumes individuals are vessels through which the group mind expresses itself (p. 114). Bion hypothesized that, when a group feels threatened or challenged, group members avoid the explicit work of the group, overcome by a primitive group mentality that reflects one of three basic assumptions:

1. Basic assumption Dependency (BaD) is apparent when group members behave as though one person (the leader) could magically gratify the group's needs. Bion argued that members experience high levels of anxiety, guilt, and resentment when engaged in BaD.
2. Basic assumption Fight/Flight (BaF) is observable when members behave as though they were called together for the purpose of preserving the group rather than any work at hand. Members behave as though the only way to accomplish this preservation is through fight or flight. BaFight is characterized by aggressive behavior and hatred toward others, while BaFlight is accompanied by high levels of anxiety and avoidance.
3. Basic assumption Pairing (BaP) occurs when group members behave as though the group purpose is reproduction. In BaP, Bion argued, two people undertake resolving the group's anxiety. Members of the BaP group tend to be obsessed by the future, and listen eagerly and attentively to any communication by the focal pair. The atmosphere is characterized by hopeful expectations, but actual problem finding and resolution are avoided (pp. 90 - 95).

Research Questions

The study sought to develop preliminary answers to the following questions:

1. To what degree does team learning consultation provide a practical framework that can guide the selection and timing of team-based interventions?
2. To what degree does the use of the team learning consultation framework enhance the speed, depth, and breadth of team learning compared to process consultation?
3. What team responses are elicited through the use of the team learning consultation framework, and what factors need to be considered in the use of the framework as a result?

Methodology

This study examined the team learning process of three teams formed in conjunction with a graduate-level university course. Each team followed a modified action learning process (Pedler, 1992). One team worked with a manufacturing firm, one a public utility, and the other a university. Three team learning consultants were selected based on the following criteria: previous experience as a process consultant, previous experience as a member of an action learning team, and working knowledge of organizational learning concepts. The three consultants participated in a one-day workshop designed to develop a shared understanding of the intervention framework. Each team met approximately six times over the 12-week period. Two observers rotated among the teams, noting the degree to which the consultants were consistent using the interventions as delineated in the workshop. After each meeting, the three team learning consultants met as a group, and the two observers provided feedback regarding the consistency of interventions among the teams and provided suggestions for the application of the team learning consultation model.

Data were obtained from audio tapes of team meetings and logs were kept by members describing their perceptions of the process. At the end of the project, the research team reviewed individual learning logs, audio tape recordings, and observer notes.

Results

The following is a presentation of the results for each research question:

Research Question #1: To what degree does team learning consultation provide a practical framework that can guide the selection and timing of team-based interventions? Data were obtained from interviews, learning logs, and reflective papers from the team learning consultants. Key findings include the following:

1. Initially, the consultants felt generally comfortable with assuming the team learning consultant role. They noted that the four-part intervention framework provided clear guidelines for determining when and how to intervene with their teams. They expressed less comfort with their ability to execute the full range of intervention methods identified in the consultant workshop.
2. Once beginning to work with the teams, consultants expressed much greater levels of uncertainty regarding the timing and choice of interventions. Each consultant found a different point in the model to be the most difficult; for one it was implementing Type 1 interventions, for another it was Type 2, and for the third it was Type 4.
3. After the research project was complete and each consultant had reviewed team members' logs and listened to audio tapes of team sessions, the consultants were surprised, and in some cases disturbed, that they missed many opportunities to intervene. They concluded that they were not as active or challenging with their teams as they thought they were at the time.
4. Each felt that their previous process consultation experience provided an important foundation to assume the role of a team learning consultant. However, each reported

struggling with reconciling the differences between the process consultation and team learning frameworks. In retrospect, each concluded that prior experience as a process consultant, while essential to assume the role as a team learning consultant, may have caused them to miss opportunities for intervention.

5. The consultants felt that their previous experience as members of learning teams was important for understanding the dynamics of the team learning process. None of the consultants discussed their previous experience as a team member with their teams, but noted in their logs that they drew on this experience as they consulted to the teams.

Research Question #2: To what degree does the use of the team learning consultation framework enhance the speed, depth, and breadth of team learning compared to process consultation?

Using the operational instructions and coding instructions from the first study (Jeris, May, & Redding, 1996), the research team reviewed individual learning logs, audio tape recordings, and observer notes. The research team reached consensus upon the following ratings of the learning cycles completed by each team: (See Table 2.)

Table 2. Research Team Ratings of Learning Cycles

Learning Cycles	**Team #1**	**Team #2**	**Team #3**
Iteration #1	Missed opportunity for double-loop learning	Missed opportunity for double-loop learning	No perceived error
Iteration #2	Missed opportunity for double-loop learning	Single-loop learning, Missed opportunity for double-loop learning	Double-loop learning
Iteration #3	Double-loop learning	Double-loop learning	Missed opportunity for double-loop learning
Iteration #4			Double-loop learning

The team ratings were then compared to team ratings from the preliminary study described earlier in which the process consultation framework was used to guide interventions. (See Table 3.) In both cases, results include the ratings of three teams over a 12 week period.

Table 3. Comparison of Ratings of Learning Cycles:
Process Consultation Study vs. Team Learning Consultation Study

	Process Consultant Study	Team Learning Consultant Study
Total number of learning cycles	8	10
Total incidences of double-loop learning	1	4
Total missed opportunities for double-loop learning	6	5

The following findings might be drawn from this comparison:

- The number of iterations of the learning cycles is somewhat higher in the team learning consultant study than in the process consultant study. This finding provides some limited evidence that the team learning consultant framework serves to enhance the speed of team learning.
- The number of incidences of double-loop learning is substantially higher in the team learning consultant study. This finding provides evidence that the team learning consultant framework may have the potential to enhance the depth of team learning.

- The number of missed opportunities for double-loop learning remains at approximately the same level. This finding suggests that there may be a need to further refine the model and/or enhance the application of the model to realize its potential impact upon team learning.

As noted, this study was based upon a conceptual framework that identified three factors to consider in determining the degree of team learning: speed, depth, and breadth. While providing some evidence of the potential impact of the team learning consultant role upon the speed and depth of learning, it did not provide useful information regarding the breadth of learning.

Research Question #3: What team responses are elicited as a result of the team learning process, and what factors need to be considered by a team learning consultant as a result?

Using a critical incident approach, the research team reviewed team member logs and audio tape recordings to identify incidents that might be characterized according to Bion's (1959) three basic assumption groups: BaF: Fight/Flight, BaD: Dependency, and BaP: Pairing. The research team reached consensus that each of the incidents associated with one of the teams could be classified according to one of the three basic assumption groups as follows:

Team 1: BaP: Pairing. Much of the team's meeting time was devoted to the interaction of two members. At points when the team seemed unsure of future direction, there appeared to be increased emphasis upon the pair for direction. Other members of the team expressed appreciation for the contribution the two made to the success of the team and rarely questioned the pair's assumptions regarding the presenting issue.

Team 2: BaD: Dependency. Group members tended to defer to a dominant "leader." In individual team member logs, there were frequent statements of concern about the team's direction, guilt whether they were delivering the product the client organization needed, and resentment toward the leader. Yet, within team meetings, group members tended to defer to the judgment of the team leader.

Team 3: BaF: Fight/Flight. Group meetings were characterized by aggressive verbal statements among team members. In early meetings, the statements were fairly indirect and subtle. In mid-stage meetings, the statements became more clear and direct. At the final meeting, the statements were highly personal, attributing team difficulties to the personal biases and styles of other team members.

Reviewing the critical incidents of all three teams, the research team made the following observations:

- The incidents described did not appear to occur as the direct result of the team learning consultant's interventions with the teams. However, they did seem to relate to the ambiguity and frustration that appear to be an inherent part of the team learning process.
- In several cases, the team learning consultants intervened when the team exhibited behaviors associated with a basic assumption group. In several of these cases, an episode of double-loop learning was observed to occur. Moreover, the behaviors associated with the basic assumption group dissipated, at least for a period of time.
- There was some feeling by team members that steps could have been taken to better prepare the team for the team learning process such as, increasing team member understanding of how the team learning process works, shaping realistic expectations about the process including fairly high levels of ambiguity, frustration and conflict.

Conclusions and Discussion

Results suggest the following conclusions:

1. The team learning consultation framework can be successfully used as a flexible guide to the selection and timing of team-based interventions.
2. Interventions based upon the team learning process appear to enhance the depth of team learning and, to a lesser degree, the speed of team learning. No evidence was provided related to the breadth of team learning.

3. The nature of the team learning process may elicit higher levels of anxiety, aggression, frustration, and these responses appear to align with the three basic assumption groups identified by Bion (1959).
4. Team learning consultant interventions appear to help teams in working through their basic assumption group responses.
5. Team learning consultant interventions that occur in response to basic assumption group behaviors appear to facilitate double-loop learning.

The study's results lead to several recommendations that may serve to enhance the use of the team learning consultation framework:

1. Enhance the degree and quality of preparation of team members for the team learning process. This preparation should include the clear definition of the roles and responsibilities of the team members and the team learning consultant. It is suggested that screening criteria be established for team members and that membership in learning teams be voluntary.
2. Encourage team learning consultants to be more active and challenging in their interventions. This might be done through several means:
    - Provide more in-depth initial training in the recognition of intervention opportunities and the use of specific intervention techniques
    - Provide opportunities for new consultants to shadow experienced team learning consultants
    - Provide increased feedback to team learning consultants regarding missed opportunities for intervention
    - Develop and enhance consultant's skills in recognizing and effectively intervening with teams manifesting behaviors common to basic assumption groups.

Several major limitations to the study are obvious, most notably its scope in terms of sample size, range of topics, and organizational strategic issues. The time constraint of a 12-week period may not allow the researchers to capture the long-term effects of using this approach. It is recommended that further research be conducted that expands the study to include a greater number of teams, broader range of topics, and longer span of time. It is also recommended that further research examine the interrelationship of the basic assumptions groups with the three phases of the learning cycle. Finally, it is suggested that a research methodology be developed to capture the impact of the team learning consultant framework upon the breadth of team learning, as well as the speed and depth of team learning.

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Data For HRD Research and the 1997 Human Performance Practices Survey

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ASTD has undertaken two research projects over the past year intended to improve our ability to definitively describe the field of HRD through empirical data. A review of existing data published in the ASTD Training Data Book summarizes what is known from existing training research. The 1997 Human Performance Practices Survey, the beginning of an annual ASTD data collection effort, then offers the opportunity to make a significant contribution to this body of knowledge.

The field of training and development has long struggled with an acute lack of reliable comparable data on training expenditures and practices in companies. To better serve the information needs of its various constituencies, the American Society for Training and Development (ASTD) has undertaken two important projects over the past year to first summarize existing training research, and then begin collecting key training data on a regular basis.

The first project involved a comprehensive review of existing data completed for the recently published *ASTD Training Data Book* (1996). Despite the growing and strategic role that employer-provided training plays in business, it has heretofore been difficult to gain a comprehensive view of the nature and magnitude of this investment. The *ASTD Training Data Book* addressed this situation by summarizing in one concise source what is known about the formal training provided by private-sector employees in the United States.

ASTD's second major initiative is a comprehensive survey of American business to be conducted in Spring 1997. The 1997 Human Performance Practices Survey is intended to provide reliable benchmarks for comparing training programs in business and become the foundation for a permanent database to be updated annually.

Sources of Existing Training Data

The *ASTD Training Data Book* was written after a comprehensive literature review and investigation of past public and private research in worker training and HRD. Following this review, sources of data were categorized as either "major data sources" or "special interest studies." Please refer to Table 1 for a complete listing by topic area of the data resources used in the *ASTD Training Data Book.*

The major data sources are generally the result of government sponsored surveys. These surveys are based in broad, representative samples of firms or establishments, and have very high response rates. Because their results can be generalized to the overall population of U.S. firms or establishments, these surveys are typically the most reliable sources of data.

The second, less reliable type of data comes from "special interest" surveys, generally conducted by private associations, trade groups, or other organizations with a particular interest in one or more training topics. These studies tend to provide more detailed information on specific training topics than do the large, government-sponsored surveys. They also tend to be based on smaller, less representative samples of firms or establishments and to have lower response rates.

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Therefore, it may not be possible to generalize the results of such studies beyond the small number of organizations, or type of organizations, represented in each study.

The major data sources for the *ASTD Training Data Book* include the 1993 and 1995 Bureau of Labor Statistics (BLS) Employer-Provided Training Surveys, the 1994-1995 National Household Education Survey conducted by the Department of Education, the 1983 and 1991 "How Workers Get Their Training" supplements to the U.S. Census Current Population Survey, the 1994 National Employer Survey by the National Center of Educational Quality of the Workforce, and the National Organizations Study conducted by the University of Illinois Research Laboratory.

The special interest studies included in the *ASTD Training Data Book* consist of several American Management Association studies, the Hewitt Associates 1993 study "Employee Benefits: Education Reimbursement Plans," Lakewood Research's annual "Industry Report," several studies by the Olsten Corporation, the "1996 Computer-Based Training Report" from SB Communications, the 1995 "Emerging Technologies for Human Performance Improvement" by the National Society for Performance Improvement, and Teresa M. Palmer's 1990 study of investments in human capital by the Fortune 500.

Also included in the *ASTD Training Data Book* review were data from several unique ASTD research efforts. These include the ASTD Benchmarking Forum, an annual survey of sixty training organizations in Fortune 500 companies conducted since 1991, and the ASTD National HRD Executive Survey, a quarterly survey of 300 high-level training practitioners on various topics.

Challenges in Summarizing Existing Training Data

As the above list illustrates, the information summarized in the *ASTD Training Data Book* was drawn from a large number of disparate sources. These sources are of variable quality. High quality data on employer-provided training have historically been difficult to obtain for a number of reasons. First and foremost, accounting systems have not been set up to document the level of investment that firms are making in training. Second, in part because of the deficiencies in accounting for training, relatively few government-sponsored surveys have been conducted on the topic. High quality government surveys are also very expensive and time consuming. Third, private surveys on training generally suffer from a variety of shortcomings. Such surveys are often very narrow in focus and administered to a very small sample of firms, or to a sample that is not representative (for example, only to large firms). Unlike government-sponsored surveys, privately administered surveys typically do not enjoy a high response rate. This raises the possibility that the survey's results are subject to non-response bias because those who respond differ systematically from those who do not. In particular, special interest studies often sample companies that are predisposed to provide employee training (large firms, for example). This may lead to over-estimation of the scope of some aspects of training, such as the number of firms providing training, or the percentage of employees within a given firm which receive training.

Additional challenges arise when synthesizing data from multiple sources. Differing methodologies rarely permit comparison of firms with similar characteristics across studies. Also important is the fact that researchers have yet to settle on standard definitions for critical concepts such as what constitutes training and which costs are counted as training expenditure. Finally, there are no large-scale representative surveys which are repeated consistent intervals to provide a baseline for measuring changes over time and comparing studies from different years.

1997 ASTD Human Performance Practices Survey

The 1997 Human Performance Practices Survey is intended to address many of the limitations of existing studies. It has been designed to generate reliable and representative data on training expenditures and practices in American companies with more than 50 employees. To ensure that the response rate is a high as possible, ASTD is offering a free-of-charge training benchmarking service to all participating organizations.

ASTD will send a customized report to any firm that completes the survey, comparing its training practices to companies of like size and industry. The offer of this free service reflects ASTD's non-profit mission to collect and disseminate information for the benefit of the field, and is likely to significantly increase the number of companies involved in this data collection effort and its potential for on-going success in years to come.

Prior to developing the survey, background research was conducted to determine the viability of a large-scale benchmarking project. In a study of 800 firms in the same industries as the proposed survey, over 60% of respondents indicated that they would be "likely" to subscribe to a training benchmarking service. Since we will be providing this service free of charge, we expect that the level of interest will exceed 60%. When asked about the financial data that will comprise the core of the 1997 survey, the vast majority of all respondents indicated that "internal training expenditure" (96%), "contracted training expenditure" (93%), and the "percentage of training expenditure for various course types" (89%) were definitely or probably useful for their organization to know. More importantly, this same research confirmed that nearly three-quarters of training directors were able to accurately collect and report this type of information (69-75% depending on the type of data).

Research Questions

The 1997 Human Performance Practices Survey will investigate several related aspects of workforce development in companies including:

1. What proportion of establishments provide formal training to employees?
2. How do various measures of training expenditure vary across firms of different industries and sizes?
3. What proportion of total training expenditure is spent for various course types in firms of different industries and sizes?
4. In what types of firms are training directors predicting increases in training effort and expenditure?
5. How does training outsourcing vary across firms of different industries and sizes?
6. What do training directors view as the key issues that will impact the practices of their training organizations over the next three years?
7. What types of firms are making use of technology-based training delivery methods?
8. How does the type and extent of training vary with the organization's other HR and work practices?
9. How does the type and extent of training vary with training director's views of organizational performance in a number of key areas?

Methodology

The ASTD Human Performance Practices Survey rests on a multi-faceted research design centered on a direct response mail survey of more than 10,000 randomly-selected training directors across the United States. In addition, ASTD will permit any private employer with more than 50 employees to self-select into the survey.

Sampling Strategy. The universe for the randomly-selected portion of the study is all private establishments, excluding membership organizations, operating in the United States with 50 or more employees. An establishment is defined as a single physical location engaged in commercial activity. The initial sample was stratified to ensure adequate representation across all industry and establishment size classifications, and randomly selected from the Dun & Bradstreet Marketplace September 1996 database. Using a matrix of establishment size and industry categories, a target number of establishments was selected in each cell. To increase the number of large establishments in the final sample, larger firms were over-sampled and 100% of establishments over 2500 employees were included. Setting cell size targets and over-sampling large establishments ensures that conclusions about variations in activity across different sized establishments will be based on a significant number of companies. Resulting data will then be weighted to reflect the establishment size and industry proportions of the universe of the study.

Address Refinement. Once the initial sample of establishments was pulled from Dun & Bradstreet, telephone interviews were conducted to locate the person at each establishment most appropriate to receive the survey. Interviewers were instructed to ascertain the name, title, and phone number of the person most responsible for employee training. If no such person existed, the interviewers then obtained the name and title of the person most responsible for human resources. Sending the survey to the individual who is best qualified to provide the requested information is critical to maximizing both the response rate and the quality of the data.

The Survey. On February 3, 1997 the survey was mailed to the 10,000 training directors identified through telephone interviews. Included with the survey was a letter to introduce the "training benchmarking service." One round of follow-up calls was then placed to non-respondents after several weeks to increase participation. In the analysis, self-selected survey respondents' data will be carefully screened and analyzed to understand how they vary from the randomly selected establishments, and then used to augment the final database.

Follow-Up Research. ASTD plans to conduct follow-up research based on the results of the initial survey, including case studies of exemplary companies. It is also ASTD's intention to establish the Human Performance Practices Survey as a permanent effort to share all types of training and human performance information across companies. As companies with outstanding practices are identified through this first phase of the project, in-depth case studies will follow the quantitative portion of the survey to complete the picture of training in the United States.

Data to be Collected

The first data to be collected in the 1997 Human Performance Practices Survey consist of demographic information upon which to base comparisons of companies. These include the number of employees, the total payroll, and the industry classification. These data will provide the basis for comparisons of the data from the remainder of the survey.

The most important data collected by the 1997 Human Performance Practices Survey will be actual training expenditures in the 1996 calendar or fiscal year. Establishments will be asked for:

- internal training expenditure (direct and indirect costs)
- external or contracted training expenditure
- tuition paid to educational institutions
- percentage of training expenditure spent for various course types

The survey will show which firms are providing the most training, what type of training is being provided, and how that training is being delivered. The data will also allow comparison of firms by industry and size on a number of critical ratios including training expenditure as a percentage of payroll, and training expenditure per employee.

The survey contains a number of questions on training delivery systems and technologies. Training directors will be asked to estimate the percentage of training time by various delivery systems in comparison to instructor-led classroom training. They will also be asked which delivery technologies they plan to implement in the near future.

An important component of the 1997 Human Performance Practices Survey is establishing a baseline to compare future changes in the field of training and development. In this inaugural effort, training directors have been asked to identify which issues are impacting their firm, and to predict changes in training expenditure, training outsourcing, and the percentage of employees that receive training.

Survey respondents have also been asked to give a detailed description of their organization's work practices through a series of questions on: employee benefits, high performance work practices, training practices, and human performance management practices.

The last section of the 1997 Human Performance Practices Survey asked respondents to report on their organization's performance using indicators such as sales, profits, employee satisfaction, quality, and customer satisfaction. Ultimately, as longitudinal data becomes available in future years, the survey should prove enormously valuable in improving our understanding of the relationship among training, work practices, and performance.

How This Research Contributes to New Knowledge in HRD

Representative Sampling. The primary purpose of the Human Performance Practices Survey is to generate representative benchmarks for training expenditures and practices for all types of companies. The sampling strategy has been devised to ensure that conclusions reached about a firm of any size or industry classification will be based on a significant number of companies. This strategy will give the data the power to predict the training profile of an 'average' firm in a given industry and establishment size classification. A rich dataset with adequate representation from all industries and firm sizes will also permit the comparison of firms across categories for an overall report on training in the United States.

While the use of nationally-representative samples in training research is not new, several of the training topics covered by the Human Performance Practices Survey have not been previously included in large-scale training surveys. These include the training delivery technologies, outsourcing practices, in-house course development capabilities, and measures of organizational performance. This type of data, along with representative estimates of training expenditure and practices should provide a clearer picture of employee training and its links to other company characteristics than ever before possible.

Directly Comparable Data. The questionnaire for the Human Performance Practices Survey was intentionally designed to permit the comparison of results with other national training surveys conducted by the Bureau of Labor Statistics. The use of BLS conventions for collection data including training expenditures should permit the first-ever replication of a major government-sponsored survey. This comparison of results will act as an important test for the ability to accurately estimate training expenditures and practices in organizations. This consistent use of definitions should also encourage future researchers to adopt similar conventions in the interest of generating data that are more comparable across multiple studies.

Opportunities for Longitudinal Studies. The 1997 Human Performance Practices Survey is intended to be the beginning of an annual data collection by ASTD. The 1997 inaugural effort will provide the baseline for reliably measuring changes in training expenditure and practices in years to come. For the first time ever, the field of HRD will have a nationally-representative large-sample survey replicated at regular intervals. In addition to generating national and industry averages for key measures of employee training, the Human Performance Practices Survey will also permit the tracking of individual firms over time. Such data will be critical to any research effort on the organizational outcomes of training investment.

Table 1. Training Data Resources By Topic Area

Topics	Data Resources
Basic Structure and Operations of Training Programs	1993 / 1995 BLS Employer Provided Training Surveys 1994 National Employer Survey, National Center on the Educational Quality of the Workforce 1990-91 / 1994-95 National Household Education Survey 1991 Current Population Survey 1990-91 National Organizations Study, Univ. of Illinois 1994 Skill for Success, The Olsten Corporation 1994 / 1995 ASTD Benchmarking Forum
Training and The Individual Firm	1990-91 National Organizations Study, Univ. of Illinois 1992 Job Training Approaches and Costs in Small and Large Firms, Small Business Administration Various years, National Longitudinal Survey of Youth 1993 / 1995 BLS Employer Provided Training Surveys 1991 Current Population Survey 1994 / 1995 ASTD Benchmarking Forum 1995 Industry Report, Lakewood Research 1990 Survey of Fortune 500 Companies, Teresa M. Palmer
Who is Getting What Training	1981, 1983, 1991 Current Population Surveys Various years, National Longitudinal Survey of Youth 1994-1995 National Household Education Survey 1992 Job Training Approaches and Costs in Small and Large Firms, Small Business Administration 1990-91 National Organizations Study, Univ. of Illinois 1993 / 1995 BLS Employer Provided Training Surveys 1995 Industry Report, Lakewood Research 1990 Survey of Fortune 500 Companies, Teresa M. Palmer 1994 Survey of Basic Skills Testing and Training, American Management Association
Technology Use in Training	1994 / 1995 ASTD Benchmarking Forum 1995 Technology in the Training Department, Lakewood Research 1995 Industry Report, Lakewood Research 1996 Computer-Based Training Report, SB Communications
Supplier Issues in Training	1990-91 National Organizations Study, Univ. of Illinois 1995 BLS Employer Provided Training Survey 1994 National Employer Survey, National Center on the Educational Quality of the Workforce 1993 Community College Workforce Training Programs for Employees of Business Industry, Labor and Government, League for Innovation 1991 Community College Involvement in Contract Training and Other Economic Development Activities, National Center for Research in Vocational Education

Table 1. Training Data Resources By Topic Area, cont'd.

Topics	Data Resources
Improving Performance	1993 BLS Employer Provided Training Survey 1992 How Common is Workplace Transformation and Who Adopts It?, Paul Osterman 1992 Upgrading the U.S. Workplace: Do Reorganization, Education Help?, Laurie Bassi 1995 ASTD National HRD Executive Surveys 1990 Variabie Pay: New Performance Rewards, The Conference Board 1995 Emerging Technologies For Human Performance Improvement, National Society for Performance Improvement

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The Analysis of Conference Proceedings for the Academy of Human Resource Development (AHRD) 1996: A Review [1]

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The aim of this study was to describe the contents and the characteristics of research studies that appeared in the 1996 Academy of Human Performance Development (AHRD) proceedings. The study revealed that most researchers conduct studies in the field of individual development and about the development of the field of HRD itself. The focus is on: integrity (which was the theme of the conference), globalization, teams, employee development, learning-on-the-job, new technologies, transfer, evaluation, organizational change, training effectiveness, partnership research, and roles in HRD. The description of the characteristics of the studies showed that current research in HRD largely consists of case studies, and that most researchers collect qualitative data to support their conclusions. Our main suggestion is that the AHRD must encourage 'methodological appropriateness' as the primary criterion for judging methodological quality. Therefore it will have to advocate a wide range of research methodologies, including both quantitative and qualitative approaches. Because HRD is an interdisciplinary field representing different perspectives, synthesizing the research studies of the AHRD into a body of knowledge can contribute to HRD practice and research.

"Corporations are becoming one of the largest institutions for education and training", state Watkins and Bellinger (1996). Yet, their business is not education. Consequently, corporations will have to build on the knowledge and experience of HRD professionals to encourage the development of employees and the corporation. To ensure that professionals have the necessary tools to face this responsibility, the Academy of Human Resource Development (AHRD) will become increasingly important for the dissemination of information.

However, HRD, as an evolving field, is still searching for a professional definition. The field of HRD is relatively young, it has not a long tradition of research and there is not yet a substantial theoretical foundation. An interdisciplinary field such as HRD can draw heavily on knowledge and work from other fields, such as economy and psychology. Nevertheless, a mature field, has a recognized body of scientific work and literature that guides practice and provides a basis for further developing theory and research (Sleezer, Sleezer & Pace, 1996).

There is a continuing debate within the AHRD what kind of research is most appropriate to enhance the foundation of knowledge in the HRD field. This study will make two assumptions that are evident to advance the field of HRD. First, the dissemination of information should cover the broad field of HRD. The AHRD serves an integral role in moving HRD from a field of fads to a field of theory and informed practice. Second, to encourage the application of HRD research findings it is essential that there is equal attention for HRD theories, processes and practices (Mulder, 1995). The development of theory concentrates on the elaboration and testing of (new) theoretical models and theories. HRD processes are concerned with the role of HRD departments and the execution of HRD activities. HRD practices describe the experiences of HRD professionals and reflections on their own activities.

At the conference of 1996, 123 papers and 184 scholars contributed 850 pages of text with research, theories and debates. The Academy selected the papers on the following criteria: (a) a problem

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statement and theoretical framework, (b) research questions and/or hypotheses, (c) an expressed methodology, and (d) results and conclusions. Contributions came from university professors, graduate students and consultants from the areas of HRD, business, psychology, education, economics, sociology, technology, and communication. In addition, HRD researchers and reflective practitioners from business, industry, and governments participated in the conference.

Last year, David Arnold of the University of Minnesota explored the types of research conducted by those who had papers accepted by the annual conference of the Academy of Human Resource Development (AHRD) 1994 and 1995. This gave a snapshot over those two years that reflects the state of research within the field of Human Resource Development (HRD). Toppins (1989) performed a similar review some years earlier. She examined 135 research projects or programs listed in the ASTD national academic database. Both studies showed that a large amount of studies on HRD is descriptive in nature.

In this research study we analyze the contents of the papers that are in the proceedings of the conference of the AHRD in 1996. The AHRD aims at: (a) encouraging systematic study of human resource development theories, processes, and practices, (b) dissemination of information about HRD, (c) encouraging the application of HRD research findings, and (d) provision of opportunities for social interaction among individuals with scholarly and professional interests in HRD, from multiple disciplines and from across the globe. Research papers are an important foundation for achieving the goals of the AHRD. Through this medium experts in the field of HRD exchange their knowledge and experiences in HRD.

Research Questions Two descriptive questions are leading this research in an attempt to explore the contributions of the proceedings to the goal of the AHRD of advancing the field of HRD: (a) How is the distribution of the proceedings of the AHRD 1996 in the HRD domains and which themes within these domains are addressed? and (b) What are the research characteristics of the studies described in the proceedings?

Purpose of this Study The purpose of this study is to inform HRD professionals about what is happening in the HRD field. Next, we want to encourage a critical reflection about the future of work, schooling and research in the HRD field. To accomplish this, an overview of the characteristics of the research that is performed will be given in this paper. A review of the major topics of the proceedings of the AHRD conference 1996 is presented in a manuscript by Van Hooff (1996).

Theoretical framework

In an attempt to explore the contribution of the proceedings to the goal of Academy of HRD of advancing the field of HRD we developed an analysis framework that is based on definitions and contains operationalized review criteria. The analytical framework includes the following elements: (a) the contents of the papers, and (b) the research characteristics of the papers.

Contents of the papers To explore the contents of the AHRD conference proceedings 1996 we first positioned papers into the categories based on the classification of HRD domains by the American Society of Training and Development (McLagan & Bedrick, 1983). Next, we formulated one keyword that covers the central theme of each proceeding.

HRD domains We identified three fundamental HRD domains based on the research of the American Society for Training and Development (McLagan et al., 1983): (a) individual development, (b) career development, and (c) organizational development. Individual development refers to the development of new knowledge, skills, and/or improved behaviours that result in performance enhancement and improvement related to one's current job. Career development focuses on providing the analysis necessary to identify the individual interests, values, competencies, activities, and assignments needed to develop skills for future jobs. Organizational development is directed at developing new and creative organization solutions to performance problems by enhancing consistency among the organizational structure, culture, processes, and strategies within the human resources domain (Gilley & Eggland, 1989).

Some contributions refer to developments in the field of HRD field itself and are positioned in a fourth category: field development, Research in this category is examining theories, practices and experiences of HRD professionals to support and improve the output of professionals working in the field of HRD. For example the papers that are concerned with last year's conference theme, Integrity, are classified in this category.

Themes In each domain we could have defined a number of themes. For example: 'needs assessment' and 'program design and instruction' are part of the domain of 'individual development'. However, it was not possible to give an exhaustive list of themes up-front. We proposed to define these themes inductively. Inductive analysis means that the patterns, themes, and categories of analysis come from the data; they emerge out of the data rather than being imposed on them prior to data collection and analysis (Patton, 1990). The procedure is as follows: we examine a paper and we formulate one keyword that covers the central theme of the paper. This keyword is registered. The next paper is examined and in the list of registered keywords we look for an appropriate keyword. If we can not find a suitable keyword we formulate a new keyword. After we analyzed the 123 papers we make combinations of themes, until we reach a maximum of 15 central themes.

Research characteristics of the papers The papers that appeared on the 1996 annual conference differ in expectations, audiences, reporting methods, research methodology and quality. For example, academic research has an audience that exists of other researchers who will judge the contributions using disciplinary standards of rigor, validity and theoretical import. In contrast, other researchers publish reports for specific stakeholders who will use the results to make decisions, improve programs, and solve practical problems.

The research method employed will vary across circumstances depending on the questions one asks, and on the nature of the observation and measurement available. It is not that one approach is better than another in all cases. But essential is that the claims the researcher makes based on the data of the study are justifiable.

To describe the research characteristics of the papers we could have used the classification of the type of research as proposed by Arnold (1996). However this classification gives little information and the categories are multi-dimensional and therefore not easy to employ. Although longitudinal examination of the proceedings of 1994, 1995, and 1996 is not possible because of different classifications we proposed a new classification model. We identified seven variables that describe a broad scale of research characteristics (Black, 1993; Patton, 1990; Yin, 1989; Bernstein & Freeman, 1975; Dillon, w.d.): research purpose, research strategy, research method, data format, sampling, analysis procedure and conclusions. These seven variables describe common quality indicators that refer to qualitative and quantitative research approaches, with different purposes and research strategies.

Methodology

To explore the contents and the characteristics of the AHRD 1996 conference proceedings 123 papers were read by one graduate student. She analyzed the articles at the hand of the research model in table 1. The graduate student did not attend the conference and she used no additional data sources. She based her opinion entirely on the information described in the papers. If some information was not given in the paper it was classified as 'unidentified'. Furthermore the papers were classified on the actual research that has been executed and described in the papers. Hence, if the actual research process differed from the intended research process we classified the actual process. However, ten research projects were in progress while the papers were submitted for the conference proceedings. Some of them present preliminary findings, others only describe the intended research process. We could not describe the actual research process and had to rely on the information about the intended research process.

Domain The 123 papers were classified into the appropriate HRD domain. In a study on HRD research by Toppins (1989) institutions that have programs listed in the ASTD national academic database were asked to name the area of human resource practice that related to their research. Data showed that respondents indicated in 71 of the 135 cases more than one area. However, despite the results of this study we refrained from the possibility of selecting more than one domain by selecting the best fitted domain on the assumption that one domain will benefit most of the research outcomes.

Themes For each paper a keyword is formulated that covers the central theme of the proceeding. To obtain an overview of the themes an inductive analysis procedure is used. This way we identified different themes that are currently addressed in the proceedings.

Research characteristics To describe the characteristics of the research we used the proposed model and classified all papers accordingly. To examine the reliability of the proposed analyze framework four members of the Faculty of Educational Science and Technology of the University of Twente classified five randomly chosen proceedings. After we made some adjustments in the original model we reached an interreliability of 70% and continued the study.

Table A Research model

Variable	Coding scheme
Research purpose (Patton, 1990)	5 = basic research 4 = applied research 3 = summative evaluation 2 = formative evaluation 1 = action research 0 = unidentified purpose
Research strategy (Yin, 1989)	5 = experimental and quasi-experimental design 4 = survey 3 = archival and literature analysis 2 = history 1 = case study 0 = unidentified strategy
Research methods (free after Dillon, w.d.)	7 = interview 6 = questionnaire 5 = observation 4 = analysis 3 = review 2 = report 1 = other (specify) 0 = unidentified method
Data format	3 = quantitative 2 = qualitative and quantitative 1 = qualitative 0 = no data collected
Sampling	4 = whole population 3 = random selection from a specified population 2 = purposive sampling from a specified population 1 = volunteers 0 = unidentified group
Analysis procedure (free after Bernstein & Freeman, 1975)	4 = inferential 3 = descriptive 2 = rating from qualitative data 1 = narrative data only 0 = no systematic material
Conclusions (free after Black, 1993)	4 = appropriately drawn on data shown 3 = some lack of justification or poorly defended 2 = inappropriate conclusions for data 1 = no justification of conclusions 0 = no conclusions drawn

Limitations of the study More than 80% of the contributions is from Northern American origin. Consequently the description of the research studies presented will predominantly pertain to the Northern

American situation. Furthermore, all contributions come from members of the AHRD and therefore it is only possible to describe the situation *within* the Academy of HRD. Although there are some entries from the Netherlands, Denmark, Finland, Canada and the United Kingdom the study focuses on the American situation in the field of HRD. Furthermore it provides only insight in the situation of the *Academy* of HRD. Therefore, the results of this study cannot be generalized to the global situation of HRD. Another challenge was the inductive analysis method to formulate the central theme of the contributions. Selecting different central themes could have resulted in the selection of a different list of themes for review. Finally, papers have a maximum length of eight pages. For some researchers this meant that they had to limit their contribution and could not present all the information that was available. This may also have resulted in some bias.

Results and Discussion

Domains and Themes figure a shows that career development rated lowest in frequency addressed. Research in this domain concentrates mainly on female career development, older employees and portfolio career development. Individual development, organizational development, and field development rated highest. The main themes were: integrity, globalization, teams, employee development, learning-on-the-job, new technologies, transfer, evaluation, organizational change, training effectiveness, partnership research, and roles in HRD.

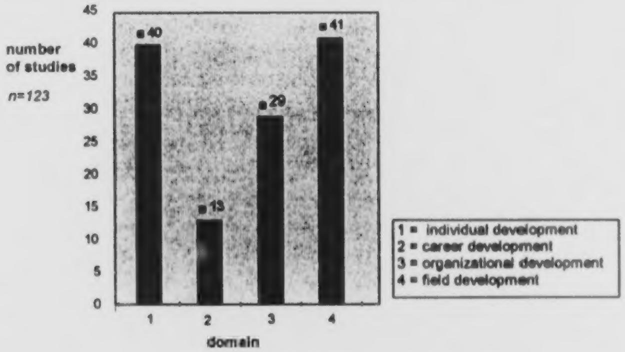

Figure A *Classification of proceedings by domain*

Research Purpose Most studies (52,0 %) describe the application of tools, methods and strategies of social sciences for solving HRD problems. Summative evaluation research rates second (26,8 %) which concentrates on determinating the effectiveness of human interventions and actions. Results of applied research can be used in a broader area than action research (12,2 %). Few studies concentrate on improving an existing program, policy, personnel, or product (4,9 %), and no basic research is presented. As we stated earlier equal attention for HRD theories, processes, and practices is essential for the development of a distinct body of knowledge for HRD. Basic research aims at formulating and testing theoretical constructs and propositions and is therefore required to establish a profound understanding of HRD. It is our opinion that more basic research is necessary in the near future.

To obtain more information from the data we proposed to analyze the data by domain. When we analyzed the number of studies by domain we noticed that no formative evaluation is executed in the domain of field development. Presumably, HRD professionals do not yet concern themselves with evaluation, while so much work has to be done in exploring and designing methods, tools and theories.

Research Strategy A case study and a survey are the most frequently used research strategy (respectively 35,0% and 30,1%). About a quarter (24,4%) of the papers base their results on literature or archival research. These research projects present no new data but quote, synthesize and evaluate studies or analyze concepts, terms, propositions and theories. Four papers consisted of an experimental or a quasi-experimental research strategy.

The greatest number of studies that describes a case study is in the domain of organizational development. We assume that research that is directed at developing new and creative organization solutions can only be investigated in case studies because of the specific context that influences the results of a research.

Research method Forty (32,5%) of the presented studies use more than one method for datacollection. Nearly all research projects use some kind of literature study to introduce their research and formulate the purpose of the research. If the research is not an archival or literature study we did not classify this method. For archival and literature analysis two common methods were analysis of concepts, terms, propositions or theories and review of studies. A survey contains in 95% of the cases an interview, a questionnaire or a combination of these two methods.

Popular research methods like questionnaires, interviews, and reviews are equally utilized among the four domains. In the domain of organizational development it is less usual to analyze concepts, terms, propositions, and theories. This may be due to the difficulties that arise when researchers want to compare different research settings. In the domain of individual development it is far more common to use analysis methods. This domain has been explored in more detail and therefore contains of a set of concepts, terms, propositions, and theories that can be investigated in research studies.

Data Format More than half of the studies uses only qualitative data as data format (57,7%). This includes literature research that reviews and analyses other studies. In 14 of the 123 papers (11,4 %) there is a combination of qualitative and quantitative data and 31 studies use quantitative data.

The use of qualitative data as a data format does not differ among the domains. Only research in the domain of field development uses more often than in other domains a combination of qualitative and quantitative data.

Sampling For 42 papers it was not possible to identify the sampling method. In 28 papers researchers perform a literature study. Herein we could not identify the choices that were made for the selection of specific studies or theories. Five papers represent emerging HRD journals and worksheets. The other nine papers do not specifically indicate what sampling method was used. Mostly, the studies use some kind of purposive sampling methods to gather their information (40,7%). Six papers use the whole population. And 17 papers use a random selection from a specified population.

Especially in the domain of field development many researchers base their conclusions on volunteer sampling. This sample method is not very convincing and should be avoided as much is possible or it should be investigated why those who do not volunteer choose not to participate and show that the way the study was conducted nor the variables investigated are influenced by the non-participators.

Analysis procedure 39 papers (31,7 %) gather only narrative data. The data is presented in the form it was collected, without any quantitative analysis. Other studies (28,5 %) quantify there qualitative data by rating them. In ten cases, though not always clearly stated, a hypothesis is rejected or not rejected. In these cases researchers find some kind of correlation between two or more variables.

Conclusions Conclusions are in 52,0 % cases tightly related to the results of the study. Eleven proceedings do not present any conclusions (8,9 %). Partly these studies are not yet completed. The rest of the papers do not present any conclusions or give no justification of the conclusions. The distinction between inappropriate conclusions and lack of justification of poorly defended conclusions is not always clear. But researchers sometimes state conclusions that seem to appear out of the blue (4,1 %).

Mainly research on the domain of field development presents no conclusion or gives no justification. This is partly a result of the qualitative data format and data analysis methods that have been used. This kind of research is descriptive in nature and it is difficult to state one or more conclusions that cover the contents of the study.

Conclusion

It must be remembered that research is a continuing process, social science research rarely produces earth-shaking discoveries, and every researcher builds on the work of others, no matter how imperfect it may be (Black, 1993). This study is a small step in developing a distinct body of knowledge for HRD. It provides information that other scholars can use to discuss the boundaries of HRD and to reach consensus on the delimiter. Because HRD is an interdisciplinary field representing different perspectives, synthesizing the research studies of the AHRD into a body of knowledge can contribute to HRD practice and research.

From the previous chapters it becomes apparent that the field of HRD has to deal with certain tensions between different viewpoints. It is not the aim of this study to reduce these tensions, but to illuminate them to sensitize members of the AHRD to the ways they view their profession and the future of their workfield.

Theory versus practice Consistent with the theme of the conference of 1996 this research aimed at describing the integrity of research papers based on a list of considerations that make sense for all research papers. Jacobs (1996) defines integrity as a judgement about the adequacy of our professional actions based on comparing what is actually done and what is called for in the HRD process. As we stated earlier research studies differ in expectations, audiences, reporting methods, research methodology and quality. What is called for in research papers depends largely on the question one asks, and the nature of the observation and measurement available. One research approach is not better than another in all cases, but one approach may be better suited for a particular problem than the other (Arnold, 1996).

The Academy of HRD (AHRD) continues to struggle to answer the dilemma of what some perceive to be a dichotomy between theory (research) and practice. Argument is quite lively over whether that research should be based in the empiricists/positivist tradition or in the interpretivist/phenomenological one. In the positivist tradition one uses quantitative and experimental methods to test hypothetical-deductive generalizations. Phenomenological inquiry uses qualitative and naturalistic approaches to inductively and holistically understand human experience in context-specific settings (Patton, 1990).

Leaving the discussion to sensitize researchers to the ways in which their methodological preferences may reduce their methodological flexibility and adaptability, the AHRD must support a pragmatic approach that does not encourage one tradition versus the other tradition. The AHRD must encourage 'methodological appropriateness' as the primary criterion for judging methodological quality. Therefor the AHRD will have to advocate a wide range of research methodologies, including both quantitative and qualitative approaches.

While fundamental scientific research contributes to research and theory in the field, HRD is increasingly being pressured to conduct research that is more 'relevant and meaningful' to the concerns and the need of society (Dirkx, 1996). The question is who defines these needs, in whose interest are they being pursued (for example client or researcher), and what is meant by relevant and meaningful. This will continue to be the subject of debate and discussion within the AHRD. However, if HRD is to be taken seriously by either industry or academia, then it must fulfil the obligation to increase the foundation of knowledge in a rigorous and credible manner.

Laboratory versus field research When Marsick (p.6) tries to develop a code of conduct for HRD professionals she remarks that professionals face much more subtle challenges tied to smaller daily decisions. The field of HRD is too complex to do research in a laboratory situation where we can concern ourselves with all aspects of people's development.

Yet, some HRD professionals claim that research is only valuable when it holds scientific relevance and is based on quantitative data from a large population with all variables identified and controlled. Examples of this kind of research are large survey and (quasi-) experimental research strategies. The proceedings describe a vast amount of survey research, but the data of these research studies cannot always be generalized beyond the respondent group, because of sampling methods and low response rates. Moreover, the results of a laboratory study have probably little value for the work of HRD professionals because they have to operate in a complex environment.

One important way to strengthen a study design is through triangulation. Patton (1990) describes methodological triangulation as the use of multiple methods to study a single program of problem. This can mean using several kinds of methods or data, including both quantitative and qualitative approaches. Using a combination of methods can reveal different aspects of empirical reality, and increases validity as the strengths of one approach can compensate for the weaknesses of another approach. Numerous research studies, especially in the domain of field development presented in this year's conference use more than one method for data-gathering. But the different methods are mostly used to describe different aspects of the object being investigated instead of investigating the same aspect with several methods.

Further research This study described the content and the research characteristics of the papers that are included in the AHRD proceedings of 1996. Cautiously we have made some remarks about the quality of the papers. We concluded that for the development of the field of HRD 'methodological appropriateness' is the primary criterion for judging methodological quality. Therefore the AHRD will have to advocate a wide range of research methodologies, including both quantitative and qualitative approaches. It is interesting to examine what constitutes methodological quality. Further research that explores quality indicators of research or a code of conduct to perform research could be of great interest for researchers.

Furthermore it would be interesting if this study is repeated over several years. This longitudinal investigation gives a broader understanding of the developments in the field than a one-time investigation like this study.

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A Survey of Surveys on Training

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The Global 100 plans an annual report on HRD to facilitate linking HRD practice with theory and research.. To avoid duplicating other studies, a survey of existing surveys was undertaken. It identified the need for (1) an annual survey using high quality survey research methods, (2) a longitudinal survey of organizations, (3) a longitudinal survey of individuals within organizations, (4) a survey comparing multiple perspectives within an organization, and (5) a survey of multi-national firms.

The Academy of Human Resource Development (AHRD) *Global 100* is a unique group of worldwide leaders in Human Resource Development (HRD) who are dedicated to linking practice to HRD research and theory. As part of its mission, the *Global 100* will devise an annual agenda as a strategy that serves as a catalyst for one aspect of the mission of the AHRD -- that of enhancing member participation in the application of HRD research findings and practices through scholar-practitioners partnering with corporations. One part of the 1996 annual agenda of the *Global 100* involves initial work on a survey in order to develop an annual report on HRD.

Rather than create yet one more survey on HRD, the *Global 100* decided to begin by reviewing previous surveys. This review will examine both content and methodology. The review will determine what content is adequately covered in other surveys and what gaps exist in terms of content. Similarly, with regard to methodology, the review will determine which data-gathering and analysis methods appear effective and which lead to some skepticism about the reliability and validity of the results. The outcome of this review will help to determine the direction for future surveys undertaken by the *Global 100* and by other AHRD members.

Research Questions

What surveys of HRD have been undertaken within the past six years? What were the objectives or problem statements of these surveys? What information did each survey yield? What methods were used to gather and analyze the data for each survey; and how effective were these methods? Finally, what gaps still remain in data needed on HRD?

Methodology

This research began with a scan of the literature using computer databases available on DIALOG. In addition, we contacted the American Society for Training and Development (ASTD) for additional recommendations.

The surveys and reports, identified through the above sources, were obtained and reviewed. In certain instances, we received copies of the data files and code books. This permitted closer examination of the data records.

Results

Rather than duplicate similar work undertaken by ASTD, I will simply make use of information that they have compiled. *The ASTD Training Data Book* (1997) provides a comprehensive review of past research on training expenditures and human performance practices. Appendix I from

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that publication, titled "Sources of Data on Training," provides a listing of surveys on training. These

are separated into categories labeled "Major Data Sources" and "Special Interest Surveys." "Major data sources" refers to studies for which the raw data are available for reanalysis. In addition, many of these are conducted by the federal government or through funding from the federal government; and, furthermore, analyses of these data sources are typically reported in academic journals. In contrast, "special interest surveys" tend to be conducted by associations or private companies. Figure 1 lists the information provided about these surveys in *The ASTD Training Data Book*.

Major Data Sources	**Special Interest Surveys**
Name	Name
Source	Source
Year(s) (Month(s)) Conducted	Year(s) (Month(s)) Conducted
Year(s) (Month(s)) for Which Data Were Collected	Year(s) (Month(s)) for Which Data Were Collected
Survey Method	Survey Method
Number of Cases	Number of Cases
Response Rate	Response Rate
Population	Population
Unit of Analysis	Unit of Analysis
Focus	Focus
Studies Conducted and Summary Articles	

Figure 1. Types of Information Available in Appendix 1 of *The ASTD Training Data Book (1997)*.

One of the critical differences between the two categories identified in the ASTD publication is that of response rate. The surveys considered as "major data source" tended to have relatively high response rates, ranging from 59 percent to 74 percent. Note that one survey by the Small Business Administration had a response rate of only 36 percent. In contrast, the surveys falling into the "special interest" category tended to have lower response rates, ranging from 14% to 40%.

Since *The ASTD Training Data Book* provides details on each of the surveys, the remainder of this paper will describe some of the more significant surveys. For this purpose, I will distinguish the surveys into the following two types: (1) annual or periodic surveys and (2) one-time surveys.

Annual or Periodic Surveys. Only three sources of annual information regarding training currently exist and are listed in Figure 2 below. The following paragraphs provide further details on these surveys.

Survey Name	Survey Focus, Method, and Response Rate
Training Magazine / Lakewood Survey	Basic data on training gathered primarily from subscribers to *Training* magazine, gathered through mailed questionnaires. Typical response rate of 15%.
ASTD National HRD Executive Survey	Data on training, staffing, and training expenditures, primarily gathered via mailed questionnaires from HRD executives in the Fortune 500 and other private companies. Typical response rate of 30% to 50%.
National Household Education Survey: Employment-Related Adult Education	Data on employment-related education activities, gathered through telephone interviews. Typical response rate of 59% to 69%.

Figure 2. Basic Information on Annual Or Periodic Surveys Of Training.

Training Magazine / Lakewood Survey: This annual survey, conducted by Lakewood Research as a part of Lakewood Publications, gathers several basic data on training, including training budgets, training recipients, types of training, sources of training, and instructional methods or media. The sample focuses primarily on subscribers of *Training* magazine, as well as those identified as being from organizations with 100 or more employees. Several different questionnaires are sent by mail. Although some follow-up is conducted, the response rate remains at about 15%. The total number of respondents ranges from about 1100 to 2600. No formal analysis of the impact of non-response bias is undertaken.

ASTD National HRD Executive Survey: This annual survey focuses on gathering data on training, including staffing and training expenditures, as well as other topics of interest. The population for the sample comes from Fortune 500 and private corporations. The survey is typically mailed to almost 300 HRD executives, and the response rate ranges between 30% and 50%.

Adult Education (AE) component of the 1991and 1995 National Household Education Survey (NHES:91) and (NHES:95): This survey focused on gathering data regarding participation in adult education, main reasons for taking the course, and the provider of the instruction. [Note that this survey replaces the Survey of Adult Education, undertaken as a supplement to the May Current Population by the Bureau of the Census, in 1981, 1984 and 1987.] A broad definition of adult education was used, which included: (1) persons enrolled full-time or part-time in a college, or in a vocational or occupational program, (2) those taking continuing education or noncredit courses, correspondence courses, or tutoring, as well as (3) those taking courses or participating in other educational activities provided by employers, community groups, and other providers. The NHES was the first major attempt by the National Center for Education Statistics (NCES) to go beyond its traditional school-based data collection systems to a household survey. Since the procedures were somewhat similar in each of the two survey years, the 1991 a more thorough description of the 1991 survey is provided.

The survey, conducted by Westat, Inc., was field tested in 1989, and data for the full-scale study were collected between late January and early May of 1991. The NHES:91 was conducted using computer-assisted telephone interviewing (CATI) technology. The Mitofsky-Waksberg procedure for random digit dialing was used, which yielded a sample in which each household had an approximately equal probability of selection. Of the numbers identified as residential, 60,322 participated (or 83.6%) while 11,901 (or 9.8%) did not participate. The total number of completed interviews was 12, 568, which included 9774 participant interviews and 2794 nonparticipant interviews. Thus, the survey achieved a relatively high participation rate. The estimation or weighting procedures included adjustment of the estimates to independent totals from the March 1991 Current Population Survey undertaken by the Bureau of the Census. A hot-deck or nearest-neighbor procedure was used to impute missing responses.

One-Time Surveys. Multitudes of one-time surveys have been conducted by the federal government, various associations, and private organizations. Figure 3 provides some basic information on a recent, important survey undertaken by the Bureau of Labor Statistics of the U.S. Department of Labor, as well as some surveys not included in *The ASTD Training Data Book*. This is followed by more detailed descriptions of these surveys.

Survey Name	**Survey Focus, Method, and Response Rate**
Employer-Provided Formal Training Survey	Data on hours of training, training activities, and training expenditures, gathered from private, non-agricultural establishments with at least 50 employees. Response rates of 66%, 71%, and 74%, depending on the form of the survey.
Survey of Senior Executives View of Training	Data on senior executives' views of training. Response rate is not reported.
Study on Evaluating the Effectiveness of Training	Data on how line managers and human resource executives evaluate the effectiveness of training. Response rate is not reported.
Training Materials Market Study	Data on changes in the training function, forms of training, and key trends. Response rate is not reported.

Figure 3. Basic Information on Selected One-Time Surveys.

Employer-Provided Formal Training Survey, undertaken by the Bureau of Labor Statistics of the U.S. Department of Labor: This survey measured three different aspects of training: (1) the average number of hours of training per employee, (2) the average number of training activities per employee, and (3) expenditures per employee in four selected spending categories. The 1995 survey was carried out over a six-month period, from May 1995 through October 1995. Two survey instruments were used -- a questionnaire and a training log. During a personal visit, field economists administered the employer questionnaire to the selected respondent. The training log was administered by the field economist or was left with the employer to complete during the following two weeks. The sampling was focused on businesses with 50 or more employees. Of the 1543 corporations selected, 1433 were eligible for survey participation. Usable employer questionnaires were collected from 1062 of the respondents, for an adjusted response of 74.1%. Usable employer logs were collected from 949 respondents, for an adjusted response rate of 66.2%. A weighting class non-response adjustment procedure was used, along with a hot-deck procedure to impute missing data.

Instructional Systems Association Study of Senior Executive's Views of Training: This 1994 study focused on senior executives with line management responsibility, having responsibility for employee training and/or development and employed by companies totaling 1,000 or more employees. It consisted of two parts: (1) focus groups conducted in Elmsford, New York and San Francisco, California, and (2) in-person interviews with 50 executives, located in Atlanta, Boston, Chicago, Dallas, Denver, New York, or San Francisco. The focus group discussion included questions regarding "big issues" facing the company; strategies employed to achieve growth and profitability; most critical "people" issues; what "training" means, along with positive and negative associations; the importance of training to the organization and to the person; the process through which training was implemented; and future orientation to training and it implementation. The in-person interview asked about critical issues facing the company, the impact of these critical issues on the people in the organization, the most-valued-employee qualities, the role played by training, attitudes toward outside training firms, and factors in selecting a training firm. The study report does not provide details on the response rate nor on procedures to adjust for non-respondent bias.

Instructional Systems Association Study of Evaluating Training: This 1995 study focused on gathering data from senior line managers and human resources executives who have authority regarding people issues and training plans. All respondents were employed by companies totaling 1,000 or more employees. It consisted of two parts: (1) two focus groups, and (2) in-person interviews with 20 human resources executives and 32 line managers. The study investigated the role of training, the types of training activities, the existence of a formal, structured way to evaluate training, and the evaluative methods used for selecting training programs. The study report does not provide details on the response rate nor on procedures to adjust for non-respondent bias.

Training Media Association Training Materials Market Study: This one-time survey asked questions concerning changes in the corporate training function, types of training media used and changes in these media, and key trends in training. A total of 105 telephone and e-mail interviews were conducted with training and human resources managers from both corporations and government, as well as executives and line managers from these organizations. Only one person refused to participate in the study.

Gaps That Currently Exist and Recommendations for Action

As can be seen from this brief overview of the various surveys and data sources on training, few annual surveys on training currently exist. In addition, few surveys of any type use rigorous survey research methods. By rigorous survey research methods, I am referring to the use of methods designed to obtain a high response rate. Furthermore, once having obtained a high response rate, few surveys undertake testing and correction for non-response bias. Finally, few surveys determine whether the respondent is providing reliable and valid data. This means that much of the so-called "data on training" may be wildly inaccurate. The following are some suggestions for overcoming this bleak picture.

1. **Annual Survey Using High Quality Survey Research Methods.** An annual survey on training, rather than a periodic survey, is desperately needed. Such a survey needs to use methods that ensure a high response rate. A high response rate can be obtained through the judicious use of incentives, as well as the use of more personal data collection methods, such as telephone or in-person interviews. Having obtained a reasonable response rate, the survey researchers will still need to test for non-response bias. If such testing reveals differences between the respondent and non-respondent groups, then appropriate methods should be used to impute missing data.
2. **Longitudinal Survey of Organizations.** None of the surveys have been undertaken as a longitudinal study. As a result, we simply have an inaccurate picture of the present. Of greater importance to those in human resources, as well as other functions within organizations, is some information on the short-term and long-term impact or outcomes of various human resource and training initiatives. Only by examining such initiatives over time can any of us determine what leads to greater or lesser effectiveness.
3. **Longitudinal Survey of Individuals with Organizations.** None of the surveys have followed individuals within organizations over time. In addition to examining

impacts or outcomes on organizations, it is critical to determine impacts r outcomes on individuals. When examining individuals over time, a combination of cross-sectional and longitudinal methods should be employed to examine the separate effects of cohort, time, and intervention (e.g., Schaie, 1996).

4. **Survey Using Multiple Perspectives.** Few of the surveys gather information from more than one person within the organization. Knowledge of training expenditures or even perspectives on the outcomes of certain human resource development practices may be the same or may be different. Further studies comparing different respondent groups can add much to our understanding.
5. **Survey of Multi-National HRD Initiatives Implemented in Multi-National Firms.** Many of these surveys gather data from multi-national firms, but none examine the implementation of HRD initiatives within the context of multi-national firms and the multi-national context.

The list given above provides some suggestions for future research. Furthermore, the suggestions can used individually or can be combined. Research following any or all of these suggestions will provide an important contribution to the knowledge base regarding HRD.

How This Research Contributes to New Knowledge in HRD

The focus of this review is upon survey research that already exists. Dissemination of such information should prove useful to both practitioners and researchers. Practitioners can use the survey data to inform their practice. Researchers can use the survey data to plan future efforts. Of greatest importance is that this review will attempt to identify gaps in the current available survey research to help pinpoint needed topics of future research in HRD. Such gaps can then be filled by initiatives, such as that being undertaken by ASTD and described in greater detail by Bassi and Benson (1997), as well as through an initiative sponsored by the *Global 100*.

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Training and the Decade of the 1980's: Did We Spend What We Said We Were Spending?

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This paper examines the way in which training budgets have changed between 1982 and 1992 in four important American industries. The findings suggest that, while training budgets are low relative to sales and payroll measures, there are wide differences in the way in which individual industries have budgeted for the training of their workers through time and such variations may have significant implications both for the delivery of industrial output, sales of goods and services, and the welfare of our citizenry.

The role of training has long been viewed as primary in human resource development. In fact, many have argued that the role of training is so important that we need to see expanding numbers of dollars spent on preparing workers for entry into and maintenance of their positions in the world of work. Some have even gone so far as to contend that the volumes of dollars expended on training have long been in a rising trajectory and that that trajectory must continue.

In what follows, we ask whether these contentions are correct or is there something else going on. While the evidence, from a diverse array of sources, is basically supportive of the above positions, there are surprising results revealed.

One Larger Perspective

The assessment of training expenditures is of great interest to the field of human resource development but there are substantial limitations on obtaining the appropriate information to answer questions on the cost impact of training. There are not, to the best of our knowledge, any widely available data sources which allow the direct testing of training budgets relative to other unrelated but important industry variables. This study is a report on one beginning effort to close this information gap.

The true rationale for such an investigation derives from the widely accepted proposition that improvements in job/work performance derive from investment in human capital (Becker, 1975) which makes workers more proficient in their work endeavors. It is that work which first raised profound questions about who pays for training and how much.

The specific inquiry undertaken here involved a comparison of data for 1982, 1987, and 1992, from three different sources. Data on training budgets were obtained from the series on training type, patterns, format, and budgets published in October of each year by Training Magazine. These data report on annual firm and industry training budgets for firms of 100 employees or more.

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These data were juxtaposed against two types of data from the U. S. Department of Commerce. From the Bureau of the Census we obtained censuses of Services, Manufacturing, Retail Trade, and Wholesale Trade which report on sales or revenues (value added and value of shipments for manufacturing), employment, and payroll for firms of 100 or more employees also on an annual basis. From the Bureau of Economic analysis we utilized national product and income accounts which provide for the measurement of industry specific variables on output in both current dollar, or nominal amounts, and in constant dollar, or real amounts...in this case constant 1982 dollars...to account for the effects of inflation.

The purpose of these data combinations was to provide a more complete comparison than was available elsewhere. The censuses allow comparison of training costs standardized in relation to the importance of the industry in the economy and the national income account data provide a comparison of industry "intent" with respect to spending on training efforts.

Methodology and Findings

To date data on four industries have been obtained for analysis where information on comparable bases is available. These are Wholesale and Retail Trade, Health Services, Business Services, and Manufacturing. The data available for comparison were limited to the years 1982, 1987, and 1992. These periods are necessitated by the fact industry censuses are taken only every five years.

Training magazine data on training budgets of firms of 100 or more employees provide detailed description of the type, form, and nature of training programs. The data from individual Bureau of the Census industry censuses are sales volume, employment, and payroll broken down by firm size groupings. Aggregation of the individual firm classifications provides for assessment of firms of 100 employees and over.

These data can be further combined to provide estimates of the average amount budgeted per employee for each industry. The planned expenditure data come from Training and the numbers of employees from the respective industry censuses.

The national income accounts data provide, for each industry, a measure of output/sales for each of the industries considered here. The sales volume however, is a report which actually includes two components--price and quantity. These accounts also provide a measure of the real output of the industries, a measure which extracts the price changes which occurred in combination the output changes in the industry. By calculating the relation between nominal output and real output for each of the relevant years, it was possible to obtain industry specific deflators to adjust training budgets on an industry particular basis. The findings are reported in *Table 1*.

The first conclusion to be drawn from *Table 1* is that training budgets as a percent of either payroll or sales are relatively small...which seems to be the conventional wisdom. The largest ratios were for health services in 1982 and manufacturing and business services in 1992. In no case was the payroll relative any higher than five percent and in half of the cases it was below two percent. Similarly, with respect to sales or revenues, the proportions were below one percent for twelve of the measures (noting the double measures of this variable for manufacturing) and in no case did they exceed two and one-half percent. The dollar comparisons by industry are also of interest.

Wholesale and Retail Trade Those sectors which are involved with the sale and transfer of goods showed both relative and absolute increases in budgets for training. These patterns doubtless reflect the increasing use of technology to record orders, sales, transfers, and delivery of merchandise and the training which must be supplied to use that technology. Of note is the fact that, while current dollar budgets for training tripled in the 1982-92 decade, they rose by almost the same relative amount in absolute or real terms. Wholesale and retail trade appear to have been serious about training in this decade.

Table 1. Training Budgets by Industry Classification as Percentages of Payroll and Sales/Revenues, Firms of 100 or More Employees, Together with Dollar Expenditures per Employee: Four Industries: 1982, 1987 and 1992

Industry Classification	Training Budgets as a Percentage of:			Dollar Cost Per:	
		Payroll	Sales/Revenue	Employee (Current)	Employee (Real, 1982=100)
Wholesale and Retail Trade	1982	1.61%	0.09%	$ 91	$ 91
	1987	2.24	0.14	168	150
	1992	2.36	0.28	317	270
Health Services	1982	4.88%	2.30%	$ 525	$ 525
	1987	1.99	0.92	369	262
	1992	1.58	0.69	395	180
Business Services	1982	1.61%	0.68%	$ 206	$ 206
	1987	2.24	0.99	310	242
	1992	3.67	1.58	678	359
Manufacturing	1982	1.15%	0.40%* 0.20%**	$ 238	$ 238
	1987	1.62%	0.60%* 0.27%**	$ 421	$ 419
	1992	3.53%	1.22%* 0.57%**	$ 1,455	$ 1,161

NOTE: Some values used in calculations are preliminary and subject to revision.

*: As a percentage of Value Added in Manufacturing.

**: As a percentage of Value of Shipments; not equal to Sales because of double counting due to intra-firm shipments.

Sources: See references.

Business Services Business services' budgets also grew over this decade, approximately doubling with respect to payroll and sales. What is interesting is the way these budgets changed on a dollar cost per employee basis. They went up by a multiple of over three times between 1982 and 1992 in current or nominal dollars; but they less than doubled in real terms. What this is saying is that prices in this industry were rising so fast that their increases cut back on the real worth of training budgeted for workers. Put differently, the effort at training in business services may have been mitigated by the real costs of conducting business.

Manufacturing For manufacturing the picture is more complicated to describe because the output or sales concepts are different. Sales/revenue figures are not reported for manufacturing because inter-plant and inter-company sales are so common that any measure of "sales" would be misleading.

For that reason, two other measures of output are used: Value Added and Value of Shipments. The first of these looks at what additional value a manufacturing concern contributes to a product (i.e., approximately revenue minus all costs) and the second looks at what got put out the front door even though it may come back at a later stage in the manufacturing sequence for further stages of processing.

We find that, early on, manufacturing did not budget very much for training but in the last five years of this decade more than doubled the relative shares--compared to value added, shipments, or payroll--intended for training. This latter growth probably reflects the growth of technology--including robots and CAD/CAM--which has become more prevalent in American manufacturing.

On a per employee basis, we see the largest growth in budgets among these four industries occurring in manufacturing. The growth in nominal budgets was more than six times over the decade, far more than any of the other industries examined here. Even in real or constant dollar terms, the level of manufacturing training budgets was almost five times as large per employee in 1992 as it was in 1982, reflecting in part the stable prices in this industry.

This pattern also seems to have resulted from a decline in light manufacturing in this country, with much of this activity going off-shore, and a concentration in higher tech production which requires more skills and returns more to the organization because of the greater levels of human capital brought to the job by employees. Another sector which was serious about training over this decade.

Health Services A discussion saved for last because of its results, this industry actually indicates a *decline* in all measures of training budgets over the 1980's, a quite anomalous result from some vantage points. Compared to payroll or revenue, by 1992 training budgets shrunk to one-third their levels at the start of the decade with most of that decline coming early in the period.

The reduction in training budgets is also quite evident in the per employee budgeting. Budgeted training, on a current dollar basis, fell by a quarter between 1982 and 1992 and actually was 30 percent lower in the middle of the period. In real terms, moreover, the decline was even more dramatic, with declines of about one-half in 1987 and by over 60 percent by 1992.

It is difficult to come up with a good explanation as to what this is about. The suggestion is that two factors are responsible for this. The first is that the growth of new--and apparently smaller sized--participants in this industry has meant that there are many new employers who cannot afford to give training to their employees. A second contributing factor is likely to be from employers, even the best, shifting the responsibility for training from themselves to the individual employee. Since many workers in health care need to be licensed to maintain their employment, and continuing education is necessary for the license, the budget conscious employer can shift the responsibility for training to those who must have it to remain gainfully employed. The dollar cost of this form of training is not included in the published data available currently.

Summary and Conclusions

The object of this exercise was exploratory; several additional industries are to be examined as well as this work continues. But what is interesting is that the data reveal patterns which at the same time are both consistent with and in conflict with our perceptions about what was happening in the world around us. We would have anticipated the size of training budgets to have increased in the 1980's--that was the conventional wisdom--and we found that in general they indeed did grow.

However, we also found numbers which confounded our expectations by falling over time. The evidence for the health care sector raises profound questions about the sources and nature of training in a crucial industry and one which is certainly to become even more so as the population ages.

Despite the discussion above, we would caution that the reader look at the *changes* which are evident in all of these numbers and not necessarily concentrate on the dollar levels reported. Each of us knows the difficulties associated with point estimates of any variable and they certainly apply here. It is the trend which is important for that points us in a direction of progress or retrogression; any absolute numbers only reflect crude estimates of way-stations along that likely erratic path.

It also must be noted in studying these numbers that there may be differences between national interests--or academic interests--and industry interests and those would be reflected here as well. Does the belief that training budgets should be increasing over time arise from the conviction that the nation should be one which is better educated as it matures...or that we can gain both professionally and personally from encouraging or offering training as an answer to the economy's needs? In either of these cases, the real issue may be how a particular industry best faces its needs in the human capital arena, regardless of how that effort is viewed and judged by those observing from the sidelines.

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Measuring Critical Thinking: Is There A Single Instrument?

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This study addresses two questions: What is the relationship between tests that measure critical thinking and those that measure readiness for self-directed learning; does the Self-Directed Learning Readiness Scale (SDLRS) measure the construct of critical thinking? A total of 277 undergraduates and graduates enrolled at an urban higher education institution took part in the study. Findings indicate there was no relationship, and the SDLRS does not appear to measure the construct critical thinking.

Two of the most often studied and debated constructs within the field of Adult Education are critical thinking and self-directed learning. To date, no consensus has been reached regarding an acceptable definition of either construct and agreement has not been reached regarding which measure of these constructs is best.

In 1953, Othanel Smith defined the term "critical thinking' as the process of reasonably deciding what to believe and do. Since that time, there have been many ways to define and explain critical thinking. Equating critical thinking to the development of logical reasoning abilities has been supported by Hallet (1984) and Ruggiero (1975). The notion that critical thinking is the development of intellectual ability has been supported by Meyers (1986) and Stice (1987). Critical thinking defined as a process and consisting of multiple steps was developed by Ennis in 1962. He identified twelve steps within the process along with the recognition that critical thinkers had abilities or capacities for progressing through the process.

In 1987, Brookfield identified critical thinking as a process consisting of four phases: 1) identification and challenging assumptions; 2) recognition of context in which assumptions are formed: 3) identification of alternative solutions; and, 4) acceptance of alternative solutions or "reflective skepticism"(p.9). Central to his definition of adult critical thinking is his belief that the adult critical thinker is responsive to his environment at work, at home and in social settings. These contexts provide the critical incident necessary to trigger the critical thinker to enter the critical thinking process.

Another direction for the definition of critical thinking follows more closely that of problem solving and was introduced in 1954 by Dressel and Mayhew. This model identified the following steps: the ability to define a problem, select pertinent information for the solution of a problem, recognize stated and unstated assumptions, formulate and select relevant hypotheses, and draw valid conclusions from inferences.

As stated initially, as with critical thinking, no consensus has been reached as to a single definition of the construct self-directed learning. The position, counter position and rebuttal of "what is self-directed" between Barry Vann and Anne Percival in the Summer, 1996 issue of Human Resource Development Quarterly aptly illustrates the difficulty in defining the term. In the literature, (Merriam & Caffarella, 1991) two distinct definitions of self-directed learning have emerged. Defining self-directed learning as the process an adult goes through in order to learn autonomously is considered a form of study. The second definition is one that defines self-directed learning as a personal characteristic or attribute that can be acquired and measured. For the purposes of this paper the construct, self-directed learning readiness embraces the definition as a personal attribute.

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The Problem

The skills needed for the work force in the year 2000 are critical thinking and self-directedness (Rosenberg, 1992). The instruments used to measure these skills are dependent upon the definition of each of these constructs and to date not one single measure of both skills or constructs has been developed. With the downsizing of corporate America, training and development specialists would be best served if one test would measure both traits.

Two measures of problem solving and critical thinking that appear to be reliable and valid are the Cornell Critical Thinking Tests (CCTT) and the Watson-Glaser Critical Thinking Appraisal (WGCTA). Studies conducted utilizing either the CCTT or WGCTA can be placed into three categories (McMillian, 1987): 1.The creation and validation of the instruments to measure the construct critical thinking, 2.The variation in levels of critical thinking abilities depending on types of majors, courses, age, gender, race, and educational levels of individuals being tested, and 3.The acquisition of critical thinking skills resulting from some type of classroom intervention.

To date, researchers have the choice of two instruments to measure the construct self-directed learning: Guglielmino and Associates' Self-Directed Learning Readiness Scale (SDLRS) and the Oddi Continuing Learning Inventory (OCLI). Oddi (1986) measures the concept of self-directed continuing learning, while the SDLRS (1977) measures the internal state of psychological readiness to undertake self-directed learning activities. Guglielmino's (1977) scale was selected for this study because the SDLRS is based upon the assumption that readiness depends upon eight factors or attributes of self-directed learners: openness to learning, self-concept as an effective learner, initiative and independence in learning, informed acceptance of responsibility, love of learning, creativity, future orientation, and the ability to use basic study and problem-solving skills. The last factor is implied within the SDLRS but not directly measured.

Research Questions

This study investigated the relationship between the two currently used measures of critical thinking, the CCTT and WGCTA and a measure of self-directed learning readiness, the SDLRS. The CCTT and WGCTA both measure the construct critical thinking as a process. The CCTT is based upon Ennis' (1962) twelve aspects of critical thinking while the WGCTA is based upon Dressel and Mayhew's (1954) five step problem solving model. Both the CCTT and WGCTA conceptual foundations fit into Brookfield's (1987) definition of adult critical thinking. The WGCTA-Form S (1994) was developed to enhance its ability in assessing adults, specifically within the context of work. The scenarios and language were up-date to reflect current practice.

The SDLRS has been subjected to factor analysis with the previously mentioned eight factors identified (Guglielmino, 1977): openness to learning, self-concept as an effective learner, initiative and independence in learning, informed acceptance of responsibility, love of learning, creativity, future orientation, and the ability to use basic study and problem-solving skills. The SDLRS was developed to measure traits associated with the readiness and abilities required for an adult to be a self-directed learner. Since the CCTT and WGCTA measure abilities to problem solve, or think critically, and the SDLRS measures abilities to create, orient on the future, and problem solve, a possible overlap of measures of problem solving might exist.

Therefore, if it can be shown that the SDLRS does in fact measure problem solving and critical thinking abilities, then it is possible that this one instrument could be used rather than having to use the SDLRS in conjunction with one of the tests of critical thinking, the CCTT or WGCTA. Two research questions were addressed. What is the relationship between tests that measure critical thinking and those that measure readiness for self-directed learning? Does the SDLRS measure critical thinking/problem solving by implication?

Methodology

Critical thinking was measured using the CCTT-Z and WGCTA-S. The CCTT-Z, Third Edition (1985) is a 52 multiple choice item questionnaire. The test includes measures of induction, deduction, observation, credibility, assumptions, and meaning. Reliability estimates for the CCTT-Z range from .50 to .77 using split half measures. The CCTT-Z correlates with other tests that attempt to measure critical thinking at the .05 level, with a range of .25 to .79. Correlations with scholastic aptitude tests range from .36 to .71. The CCTT-Z correlates moderately with graduate school success. The completion time is not more than fifty minutes. The normative data for the CCTT-Z (Ennis, Millman & Tomko, 1985) identified a mean range from 25.6 to 39.2 with standard deviations ranging between 4.4 to 5.7. The norm samples ranged from 10th grade education through graduate school.

The WGCTA-S (Watson-Glaser, 1994) was developed from the Watson-Glaser Critical Thinking Appraisal Forms A and B, specifically for assessment of adults in the workforce. The WGCTA-S is composed of 16 scenarios, 40 test items and is completed in approximately 30 minutes. The WGCTA-S results are reported in both the total raw score and the five subtest scores: 1) Inference; 2) Recognition of assumptions; 3) Deduction; 4) Interpretation; and, 5) Evaluation of Arguments. The reliability of the WGCTA-S ranged from a Cronbach's alpa coefficient of .90 to .69 for various occupations. Test-retest scores at two week intervals for the WGCTA-S correlated at .81 ($p<.001$). Part-whole correlations of Form S and A, based upon a sample of 3,727, ranged from .89 to .97. The means and standard deviations for Form S were derived from the normative sample used for Form A, using equivalent raw scores from Form S. WGCTA-S means range from 31.48 to 33.99 with standard deviations between 4.21 to 5.20. To date, no studies have been identified utilizing the new Form S.

The SDLRS was developed in 1977 by Lucy Guglielmino. The SDLRS contains 58 items with a five point Likert scale rating from almost never true of me to almost always true of me. Seventeen items are worded in reverse thus requiring a change in weights prior to scoring. The total score is then calculated. The completion time is approximately 20 to 25 minutes. The reliability estimate of the SDLRS is split-half Perarson product moment correlation with Spear-Brown correction is .91 based upon a sample of 3,151 (Guglielmino, 1995). Convergent validity studies of the SDLRS has provided apparently conflicting results. Caffarella and Caffarella (1986) report no change in SDLRS scores for students in a self-directed class. Kasworm (1982) reports significant increases in SDLRS scores as a result of self-directed instruction. The results of the construct validity of the SDLRS indicate a positive correlations to ratings of self-directed behaviors and total SDLRS scores (Finestone, 1986; Guglielmino & Guglielmino, 1988; and Roberts, 1986) The Guglielmino & Associates' *Test Manual* (1995) list the mean for the SDLRS as 214 with a standard deviation of 25.59 for an adult population.

Demographic data collected include age, race, gender, program of study, and highest grade completed. Results of studies utilizing either the CCTT-Z , WGCTA-S, or SDRLS have reported results indicating the effects of these demographic variables on total scores. Generally, middle aged, white, males with higher levels of education score higher on measures of critical thinking. Recent studies (Denney, 1995) report a decline in critical thinking ability in the older adult population. Different types of academic preparation have been shown to affect total critical thinking scores. Programs that require reflective thinking have shown an increase in both the CCTT and WGCTA-A scores. The SDLRS score has been affected by age and gender.

The sample for this study consisted of students enrolled at an urban institution of higher education in the Southeast. The students were undergraduates enrolled in allied health, teacher preparation, sports administration, physical education, exercise physiology, and training & development programs. Three classes of graduate students in training & development were included.

Data Collection

Informed consents were signed prior to data collection. The students who volunteered to participate were randomly assigned one of three instruments to complete first, either the CCTT, WGCTA or SDLRS. Data were collected over a period of one to two weeks to maintain the integrity of the CCTT and WGCTA. Demographic date were collected on the answer sheet of the standardized critical thinking instruments.

All data were entered into a data screen created in an *Access* program. The file data was exported into *SPSS 6.1* for statistical analysis. Descriptive statistics and the Pearson-product correlations were calculated.

Demographic variables Table 1 presents the frequencies for the nominal variables. The total sample consisted of 277 students, 141 or 50.9% female, coded 0, and 136 or 49.1% male coded 1. The sample contained 244 or 88.1% whites coded 1, 31 or 11.2% African-Americans coded 2, and 2 others coded 3. The highest grade completed ranged from high school graduate to completion of a doctorate. The majority, 43% of the sample, had completed two years of college.

Table 1

Frequencies and Percentages of Demographic Characteristics of Sample

Variable	Value	Frequency	Percent
Race			
White	1.00	244	88.1
Black	2.00	31	11.2
Other	3.00	2	.7
Gender			
Female	.00	141	50.9
Male	1.00	136	49.1
Highest Grade Completed	12.00000	12	4.3
	13.00000	9	3.2
	14.00000	58	20.9
	15.00000	68	24.5
	16.00000	119	43.0
	17.00000	10	3.6
	18.00000	1	.4

Table 2 presents the descriptive statistics for all the ordinal data. The average age of the sample was 28.73 with a standardad deviation of 7.52 and a range of 18.03 to 55.99. Not all students completed all three standardized instruments. The mean score of the 181 students that completed the SDLRS was 226.57, standard deviation of 22.36 and a minimum of 159 to a maximum of 288. Two hundred and seventy five students completed the WGCTA-S and had a mean score of 26.20, standard deviation of 6.15, with a range of 11 to 40. One hundred and ninety completed the CCTT-Z, and the mean was 26.20 with a standard deviation of 5.36 and a range of 16 to 41.

Table 2

Means, Standard Deviations, Ranges for Age, SDLRS Scores, WGCTA Scores, and CCTT Scores

Variable	Mean	Student Development	Minimum	Maximum
Age	28.73	7.72	18.03	55.99
SDLRS	226.57	22.36	159.00	288.00
WGCTA	26.20	6.15	11.00	40.00
CCTT	27.36	5.36	16.00	41.00

Data Analysis

The Pearson correlation coefficients were calculated for the demographic variables and the total scores of the CCTT-Z, WGCTA-A, and SDLRS, Table 3. Of the 181 students who completed the SDLRS and the WGCTA-S there was no relationship established between the two measures. The SDLRS and CCTT-Z were not related for the 129 students in the sample.

Additional analyses were conducted to explore the lack of relationship between the SDLRS and the two measures of critical thinking, the WGCTA and CCTT. Table 3 presents the correlation coefficients for each of the three measures and the demographic variables. The SDRLS has been shown to correlate to age, and in this sample there is a slight correlation to age of .2221 at p=.003. The WGCTA was positively correlated to age, gender, and highest grade completed. A negative correlation was found between race and WGCTA. In previous studies, the WGCTA has been correlated to older, white, males that had higher levels of formal education. This sample exhibited a similiar relationship to the WGCTA. The sample's CCTT was correlated to highest grade completed which is consistent with other findings.

Table 3

Pearson Product Correlation Coefficients of Demographic Characteristics and the SDLRS, WGCTA and CCTT Scores

Variable	SDLRS	WGCTA	CCTT
Age	.2221 (181) p= .003	.2196 (275) p= .000	.0396 (190) P= .587
Race	.1071 (181) p= .151	-.1907 (275) p= .001	-.1261 (190) p= .083
Gender	-.1007 (181) p= .177	.1447 (275) p= .016	.1067 (190) p= .143
Highest	.0604 (181) p= .419	.2231 (275) p= .000	.1501 (190) p= .039
SDLRS	1.0000 (181) p= .	.0786 (181) p= .293	.1378 (129) p= .119

The sample's means of the SDLRS, WGCTA and CCTT were compared to the normative means by one-sample t-tests, Table 4. The SDLRS normative sample means was 214 (Guglielmino, 1995), and was significant at the .0001 level. The sample's mean was significantly higher than the norm's mean. The WGCTA mean of 31.48 (Watson-Glaser, 1994) represented the lowest mean for the norm sample, and was signigicant at the .0001 level. The sample had a statistically signigicant lower mean than the norm sample. The sample's CCTT mean was within the range of the normative mean.

Table 4

The Sample of Means for SDLRS and WGCTA Compared to Normal Sample

Variable	Number of Cases	Mean	SD	Test Value	T-Value	df	P=
SDLRS	181	222.5691	23.361	214.00	7.56	180	.0001
WGCTA	275	26.2000	6.145	31.48	-14.25	274	.0001

Conclusions

While this study failed to find a relationship between standard measures of critical thinking and self-directed learning readiness, the possibility still exists that one measure could identify both constructs. The results of this study were affected by the variation in means for the sample and the normative samples. Additional studies, using samples closer to the normative sample need to be conducted.

The results of this study indicate that the SDLRS does not appear to be measuring the construct problem-solving, when compared to standardized measures. Additional factorial analysis studies need to be conducted on the SDLP.S to verify if the instrument is measuring problem-solving abilities.

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Combining Constructivism and Andragogy in Computer Software Training

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> *Changes in both microcomputer technology and the context in which it operates necessitate a new approach to training that incorporates constructivist and andragogical practices to deliver a more learner-centered experience. This articles describes three interventions that demonstrate how this can be achieved.*

Computer software training is typically delivered in the instructor-centered modality. Objectives are predetermined, the method of training is didactic, and a demonstration is followed by "choral" guided practice recreating or slightly modifying the training example (Masie, 1996). This is understandable, given the typical goals of the training: learning sequential procedures for the most commonly-used features of off-the-shelf software. However, powerful changes are impacting the computer training industry: stabilization of GUI (graphical user interface) operating systems, migration towards common platform architecture, increasingly congruent software releases, and greater automation of complex tasks within programs (Furst-Bowe, 1996). For users, this standardization means having to learn fewer details of a particular software version with greater portability of skills between programs. User focus can switch from "getting the darn thing to run" to getting their work done—moving from operational to applied concerns. For organizations, this may result in fewer instructor-led classes as technology delivered instruction also improves (Rosenthal, 1996). A new generation of computer-based training (CBT) packages challenges the dominance of instructor-led training (ILT) with high-quality, interactive, inexpensive products (Buske, 1996). Reasonable prospects for future improvements in computer technology are voice-synthesized data input, organization-wide custom database design, cheap videoconferencing, and the creation of more powerful search engines—perhaps with artificial intelligence components and live interactivity as the "computer" asks questions to help refine or even redirect queries. All have the potential to impact computer software training *practices* as well as desktop use.

The typical way of doing computer training is destined for change, and not, we believe, simply to CBT (Simia, 1996). The present inclination to shift away from ILT provides the opportunity to re-examine how training is conducted (Gremmo and Abe, 1993). Further, here is a chance to consider approaches that have been used for more complex and higher-level learning outcomes (Knowles, 1980; Cross, 1981; Smith, 1993).

Conceptual Framework

Most computer software training is developed using an approach based on instructional systems design (ISD). Basically, the designer or instructional specialist determines learning needs (or performance gap), develops outcome objectives, and designs content to meet these objectives. Two other paradigms of learning are presented here in contrast to this approach because of their role in designing the interventions under study.

Andragogical Principles Andragogical principles of facilitating learning include the following premises:

- Adults learn what they value.
- Adults want to apply what they learn to their jobs.
- Adults bring rich, varied experiences to a learning activity.
- Adults can be self-directed in their learning when they have the capability.
- Adults benefit by utilizing their own learning styles and preferences.
- Adults can be responsible for their own learning.

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Constructivism Constructivist approaches to instructional design instruction provide a set of assumptions about how people learn:

- Knowledge is constructed uniquely by each person, a function of past experience and the interpretations formed by their minds.
- Learning is an active process of engaging and interacting with the environment.
- Effective facilitation involves engaging learners dynamically in their learning, so the knowledge they construct is useable in other contexts and new situations.
- Useful knowledge is derived from solving problems related to real-world practice situations.

Research Questions

The following questions guided the research activities reported here:

1. How can skills-based software training be delivered in a way that is more learner-centered in its content and context?
2. How can andragogical and constructivist approaches to instruction be incorporated into organization-wide computer skills training efforts?

Method

This was an *action research* study of training implementation at three federal agencies with the purpose of discovering solutions through solving real-world problems (Merriam and Simpson, 1995). Each setting had a mandate for a comprehensive, organization-wide training program for a particular training need, although the specific need was different in each organization. Each setting also had a unique set of learner needs to be addressed. The analysis in each case describes how these programs were implemented, identifies the obstacles encountered, explains how the obstacles were overcome, and discusses the manner in which theory was applied to practice. Each case then becomes an exemplar of how to implement a learner-centered approach to training, incorporating andragogical methods and constructivist theory.

Case 1 The Resolution Trust Corporation (RTC) was an organization (it closed its doors officially on December 31, 1995) trying to impart the freedom of self-directed learning to employees in lieu of ILT. By its charter, the RTC could not provide non-job related training to employees. This prevented any training for skills not immediately applicable to their curtailing jobs. For instance, RTC employees were never trained in Windows® — even though it was clear any subsequent employment would likely demand knowledge of that operating environment. To assist in job hunting without violating this precept, the RTC offered Internet classes in job-related activities, and then announced that as part of the specific number of hours per month employees were allotted to pursue a new job, they could use their ILT-derived Internet skills to search and apply for new positions.

Under this implementation, workers were given general classroom-based training and expected to obtain specific application skills through their own learning. Given the relatively low level of computer user sophistication within the RTC, there was concern that employees would become frustrated with the new, cumbersome Internet and their use for both work and job hunting would be small. Also, employees were unaccustomed to directing their own learning. Two essential organization elements were provided to minimize these obstacles: *information* (Human Resources provided a supplemental brochure on how to use the Internet for job hunting), and *support* for its use (time from normal duties, supervisory backing, and technical assistance from the Help Desk). With their personal sense of urgency, learners broke from the spoon-feed-me stance and tackled the technology with determination. They aggressively sought knowledge, and solved problems of sources, connection, Internet-based e-mail, downloading files, and printing quickly. Their high value of the information and clear perception of its immediate, personal application proved an ideal medium for the adoption of constructivist and andragogical approaches. Further, once the Internet job-hunting guide was well-circulated, fewer Internet training classes were scheduled as informal learning replaced formal learning of necessary skills. Employees expanded their use of the Internet in job-related activities as well, with more people using the Internet in more complex ways than had been anticipated. This combined constructivist and andragogical approach not only permitted an innovative job-hunting tactic but contributed, in part, to the early closing of the training center.

Case 2 At the Federal Deposit Insurance Corporation (FDIC), an enormous reduction-in-force is shrinking the organization 19,000 to 4,500 over two years. Workers are facing new tasks with new tools and no time or budget for instructor-led training. (It would take approximately three years to provide the present 9,000 employees through comparable ILT given the available facilities). The project manager in charge of training has been experimenting with constructivist approaches to microcomputer training and designing new means of delivering training *assistance* to learners. This would support transitioning from instructor-led to self-directed learning.

Again, the intervention would work within the existing ILT medium to incorporate andragogical and constructivist practices. Within this organization is a history of "top-down" directed training and a sense of disenfranchisement by learners. In addition, initial efforts to utilize computer-based training (CBT) have not been well-received. For instance, people re-shuffled into the organization from another agency were expected to teach themselves the Windows® environment through a network-based tutorial delivered to their desktop. Although a good product, users resisted the approach and came to the ILT for specific applications unprepared. There was no means of proving users participated in the CBT program, and instructors were confronted with individuals who either claim to have taken the tutorial when they had not, or had taken it so long before or learned so little from it, that they might as well not have done so. This compounds the task for instructors by adding a separate set of learning needs to the class. Tension is created for the workers who have not received classroom training in Windows®, and resentment rises among Windows®-fluent users who feel their training time is ill-used addressing issues outside the class topics. (Keep in mind that these workers are competing for the same diminishing number of positions.)

Applying adult learning practices within ILT yielded two important remedies: 1) it began the transfer of responsibility for learning to the learners themselves, and 2) it provided a supported learning environment where mistakes could be made, analyzed, and correct procedures discovered *without* encouraging competitiveness. For example, instead of having the topics to be studied dictated, learners participated in determining their own curriculum from a preset list. Within the classroom setting, a contract was agreed upon between instructor and learner to cover the portions of training most salient to their job. Additional topics, which may or may not have been on the original list, were covered as time permitted. The instructor may have performed the skill for a group or the whole class, or facilitated learners working in groups or individually. As proof of understanding, the learner may have demonstrated the new skill to the instructor, group, or class; or the learner depended on self-evaluation to determine when satisfactory learning had taken place.

Allowing learners to tailor learning to their needs enhanced the value they place on what they learn, directed learning to be relevant to their work, provided concurrence that the method of learning was comfortable, and promoted the selection of a measurement and demonstration process for their success in learning congruent with their learning styles. This approach was well-received by learners and new options for learning facilitation are being considered. Part-time open learning laboratories, "sneaker-based" or "short-order" training by telephone, deskside coaching by appointment, and increased accountability by learners for their learning achievement are all being reviewed for inclusion in a new generation of computer training. Through the combined approach, the shift from passive to active learning and accepting responsibility for one's own learning is underway.

Case 3 The Patent & Trademark Office (PTO) is in pursuit of *integrated* patent searching capability through the Global Patent Information (GPI) Project. As part of that project, prototype interfaces to existing and developing databases from around the world are produced. The final products will save patent examiners hours of time and increase the validity of patent application acceptance and rejection. Currently, examiners have limited access to training due to facility and financial restrictions. Training has been intensive classroom initiation with occasional follow-on sessions covering new tools. PTO is investigating migrating to more technology-delivered instruction, particularly as it relates to desktop-delivered training.

As the GPI interfaces are experimental, training costs for explaining the prototypes to volunteer patent examiners must be minimal, as well as the disruption to their normal work duties. Short turn around times for training development, on-going changes to the interfaces, and alterations based on user feedback combine to challenge training design and delivery. Budgetary restrictions and the evolution of integrated applications and platforms further extend the opportunity to redefine training tools and delivery, and for andragogical and constructivist modifications. Examiners' expressed need for more training has been emphasized in focus group sessions . Along with their strong desire for more training, the nature of their work demands a high level of autonomy and self-directed problem solving, making them good candidates for a combined constructivist, andragogical learning approach. Meeting these needs requires approaching the problem from several fronts. First, an experimental process for training delivery itself has been devised: a non-authoring tool level CBT developer. This process has created an eight-part individualized training tutorial in HTML format that will be available through the PTO's local Intranet, PTOnet. Future tutorials can be created and updated at a fraction of the usual cost. Additional user support required for this training is being identified through interactions with end users (the learners) via focus groups, hyperlinked e-mail, and telephoning a separate, technical help desk. Extending the technology-delivered instruction through ample learner support is valued by management as well as users. As the final interface is decided, a full-fledged, interactive CBT program is planned, providing one of the first opportunities to evaluate its performance in the PTO environment as well as its efficacy in meeting learning goals. Desktop-delivered instruction, provided just-in-time, at learner-directed intervals on learner-selected topics, dovetails should dovetail neatly with the independent work practices of employees.

Findings

Learning was found to occur in an almost endless variety of ways. Three dimensions in particular appeared to describe important characteristics to each variety of learning: content, context, and control.

Dimensions of Learning Modes Each dimension has relevance for the incorporation of andragogical and constructivist features. See Figure 1.

Content. The content dimension describes the focus of what is to be learned ranging from general computer technology skills and competencies to solving particular work-based problems and applications.

Context. The context dimension describes the setting in which the learning occurs. This ranges from group settings in a typical training room or computer laboratory to settings in which the learning is totally individualized at the learner's workstation.

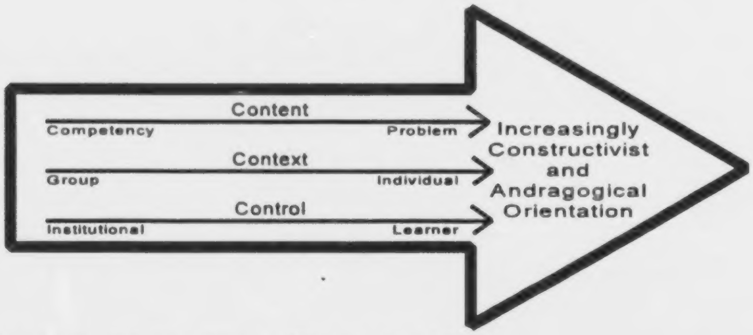

Figure 1. Dimensions of Learning Modes

Control. The third dimension, control, refers to who specifically decides what is to be learned. In more traditional training, control is in the purview of the trainer, the curriculum developer or the person elsewhere in the organization responsible for assessing needs and deciding what learning is most useful for people to be exposed to. At the other end of the dimension, the locus of control is in the hands of the learner who decides on an individual basis what he or she wants to learn, when, and how.

Use of Organizational Resources There are three major categories of learning activities based on increasing involvement of organizational resources. At the low end of resource utilization are various self-help activities. Next are various avenues of automated help which connect the learner to resources beyond their immediate workstation area. The third level involves direct assistance by an expert technician or trainer and perhaps require organizational facilities as well. See Figure 2.

Self-help Learning Activities. These activities all occur at or near the individual's workstation and do not require network resources or contributions from training or technical personnel. These include using the on-line help, wizards, coaches, and tutorials built into the application software. Also included are paper-based materials such as user manuals provided with the software or other materials provided by the training department such as deskside job aids designed for summarizing and/or detailing how to accomplish particular tasks. Lastly, self-help refers to approaching a co-worker or peer or formally- or informally-identified SMEs (Subject Matter Experts).

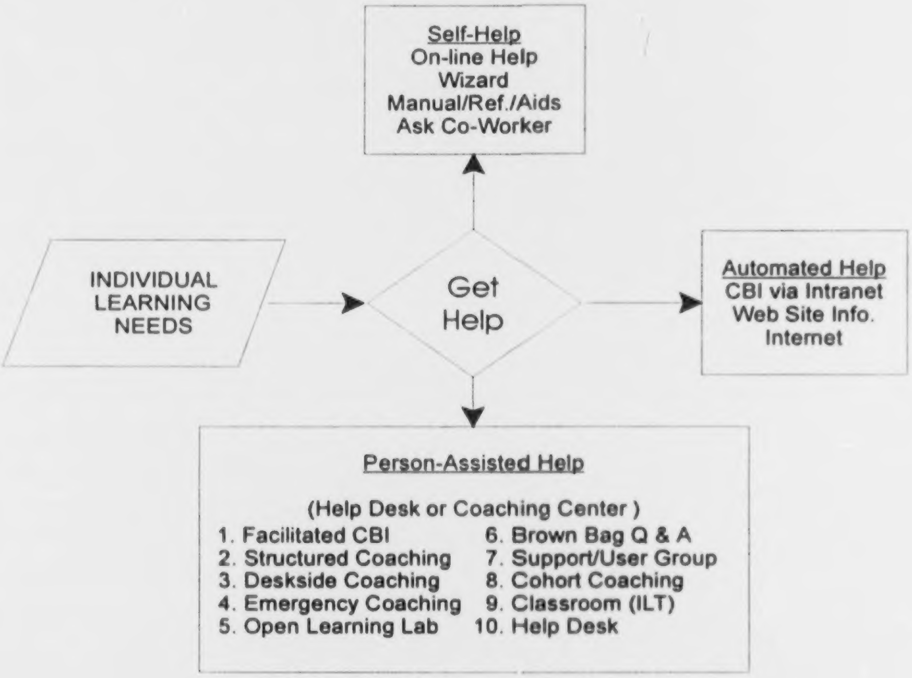
Self-Help
On-line Help
Wizard
Manual/Ref./Aids
Ask Co-Worker
INDIVIDUAL LEARNING NEEDS
Get Help
Automated Help
CBI via Intranet
Web Site Info.
Internet
Person-Assisted Help
(Help Desk or Coaching Center)
1. Facilitated CBI
2. Structured Coaching
3. Deskside Coaching
4. Emergency Coaching
5. Open Learning Lab
6. Brown Bag Q & A
7. Support/User Group
8. Cohort Coaching
9. Classroom (ILT)
10. Help Desk

Figure 2. Use of Organizational Resources

Automated Learning Activities. Automation here refers to desktop-delivered formal or informal computer-based training. The focus of most automated help is general competency rather than solving particular problems of applications. This category includes network- or intranet-based resources, or searchable information housed on the Internet. (There may be licenses or fees required for some information access.) An intranet, or an organization-specific computer network which replicates the easy browsing features of the Internet, will be increasingly called upon to host training resources. Some of the materials available will be CBI programs, job aids, on-line manuals, "tips and tricks," feature updates, use guidelines including cases of problems solved, and classroom registration.

Person-assisted Learning Activities. When an individual contracts training or technical staff for direct intervention they are engaged in a person-assisted learning activity. The focus of this type of activity is originally learner-directed but may be dimensionalized from learner-directed to instructor-directed in operation. The first line of interaction is generally the help desk. Help desks are often outsourced and the level of knowledge available varies greatly. Working with help desk personnel may shift the focus from delivering step-by-step problem resolution to transferring knowledge for future application. Depending on the nature of the problem and the skills of the personnel (both learner and instructor), control for how much actual learning is available is in the hands of the instructor or technician. In the second tier of person-assisted learning, there is direct involvement with a person as learning facilitator. The range of interactions includes facilitated CBT or using CBT in a traditional classroom setting with an instructor available to support the learner, structured coaching or classroom-based coaching sessions held in response to specific topical requests for learning received by the help desk, deskside coaching or one-on-one coaching conducted at the learner's workstation by appointment, emergency or immediate coaching (within two hours following the request, for example) to solve an application problem, open learning laboratories where, at regular intervals, an instructor is available to oversee walk-in, self-directed topical learning, brown bag question-and-answer sessions where an instructor or organizational SME presents use tips and responds to learner inquiries, support/user groups for learners who augment learning through discussion of problems and solutions, and cohort coaching sessions where learners with like learning styles and needs meet as a group to collaboratively solve problems and gain knowledge. Traditional classroom or ILT also falls within this category.

Recommendations

HRD Practice There are strong advantages to this approach. Incorporating learners into the design and delivery of training frees resources to be applied in higher-order contexts for a better return on the training investment.

First, depending on the size of the organization, outsourcing the help desk may reduce both cost and administrative effort substantially. Specifically, large, nationally-based technical support staff operations *improve* the quality of service as opposed to what happens when best-price criteria are the basis for contract award. These help desk personnel can potentially become as familiar with the organization as on-site personnel who also operate, and provide intervention, virtually. Wise outsourcing of the help desk can free HRD personnel from administrative duties and funds for improving training programs.

Second, by restructuring the help system to include automated services, the individual receives greater service *at their workstation.* This results in less disruption of work and greater receptivity to the comprehensive approach to software migration and training efforts. Providing just-in-time training at the desktop for learner-determined duration are the highly rated elements of training for end users.

Third, the juxtaposition of several kinds of coaching and support modalities increases the chances of meeting individual learner needs in concert with their personalities and learning styles. This range of service is desirable to demonstrate the commitment of the organization to supporting the user during learning. Investing in the individual according to his or her preferences yields higher returns on training dollars by providing more appropriate, better-utilized training. Building the employable skills of a person helps them feel better able to perform their job tasks. It also reduces anxiety about being readily employable outside the organization, in anticipation of the FDIC's additional planned reductions in force. The variable approach to meeting training needs is the best tactic to meet the organization's learning goals.

Meeting Learner Needs Meeting learner needs can be accomplished through a variety of vehicles. A Coaching Center can be established. Upon determining their need for learning, the individual contacts the Coaching Center Coordinator who provides initial guidance to on- and off-line services and support. The Coordinator will assist the learner in determining which service is most appropriate to their situation. Two broad categories of help are available: coaching services and follow-up information and support services.

Coaching Services Needs of a general nature will be referred to the Facilitated CBT conducted in a classroom. Special topics will be booked into the next Structured Coaching course on a particular topic. (Help Desk logs and the records of the Coordinator will be coalesced to justify scheduling Structured Coaching courses.) Deskside Coaching, under this premise, will be scheduled by appointment allowing greater service with fewer coaching resources. For users in immediate need of assistance, Emergency Coaching will be available within two hours of the received request. The cornerstone of limiting this more expensive form of training (almost the equivalent of a Personal Trainer) will be that each learner is limited to a specific number of Emergency Coaching sessions within an agreed upon time period such as two per month for each of the first three months. This both limits the costs and deters abuse of this learning mechanism.

Follow-up and Support Services An often overlooked source of learning is the *Open Learning Laboratory*. At certain times, a classroom will be available for "drop in" individual and collaborative learning facilitation. Depending on the numbers of users, an office may be set up for small training labs (up to 6 users) in other buildings. This small laboratory would preferably be adjacent to the coaches' office so that they could provide over-the-shoulder assistance or attend to other duties as needed. This arrangement would contribute to the development of the informal, supported learning community atmosphere.

Brown Bag Question and Answer Sessions could be offered regularly (monthly or bi-weekly). In an auditorium setting, participants would be free to ask questions of one of the coaches while enjoying a simple lunch provided by the organization. Contributions from the audience would be encouraged. Special guest *power users* from within the organization could be featured and the results from a weekly contest for the Best User Tip presented. The winning tip would be posted on the Training Home Page. The Brown Bag Q&A emphasizes the on-going support aspect of the transition, and creates a positive environment for discussing topics in a group format.

Following the Brown Bag Q&A, a Support/User Group would be offered for up to an hour. This would continue any discussion of developments and experiences in the focus-group style. The empathy and rich exchange of ideas and experiences can be cathartic for users feeling overwhelmed or disenfranchised. It can also be the launch point for informal or formal User Groups to meet with or without facilitation during and *after* the contract. Internal User Groups can offset the costs of expanding training programs as knowledge demands increase. They assure the topicality of discussions and the applicability of suggestions.

Lastly, for some learners, the individual learning approach is compounded by expressed or internalized feelings of alienation from the mechanized processes of computers. To foment the positive attitude necessary to achieve the organization goals for these users, a supportive, collaborative learning approach is wise. The *Cohort Coaching* medium is reserved for those users identified by frequent requests for low-level assistance who have not met performance criteria or outright asked for additional, personal instruction. From grade school to graduate school, cohort groups have produced remarkable improvements in learning outcomes for learners whose predilection is outside the targeted area of study. Cohort groups might benefit from more basic instruction in computers and their use before moving into the new software applications. Essential to this instruction is a building of self-esteem and self-confidence in the use of computers and realization of their service to the individual in terms of doing their job. The criticality of imparting the *value* of this undertaking cannot be overemphasized. For the Cohort Coaching candidate, instruction will best work of a particularly *personal* nature. These learners often identify intensely with their instructor, and it is this relationship that promulgates further learning.

Cohort Coaching is an alternative to the more expensive Deskside or Emergency Coaching options. The user is given the environment for supported learning in the learner-centered, constructivist style, and can improve less-than-enthusiastic attitudes and minimal skills. Cohort Coaching affords the organization the chance to attend to often long-term underutilization of investments in software and hardware, and the accompanying thwarted productivity goals. It is an powerful component in the building of a learning community, reaching out in very human terms to users — an important element in responding to those who decry "dehumanizing" the learning process through CBT. *Both* are part of the total learning picture.

Summary

This article invites readers to consider combining constructivist and andragogical practices in the modern design of computer training. Examination of successful practices from other fields and theories will cultivate training approaches that serve higher-order learner needs with better fit and smoother function. Organizations will likely redirect training programs to applied use rather than basic operation of computer programs. Technical trainers may need to be retrained in facilitation skills as the content area of computer usage incorporates increasingly learner-centered and problem-focused orientations.

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Learning to Learn in the Workplace

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The HRD community can benefit from a discussion of the relationship of learning how to learn and workplace learning. This paper examines topics such as: building awareness of self-as-learner, creating active learners in the workplace, expanding the worker's repertoire of learning strategies, helping workers compensate for learning deficiencies, increasing self-monitoring and reflection by workers, and facilitating learning how to learn in the workplace.

The refrain is often heard from supervisors and managers in the workplace. They state "We need workers who are flexible, adaptable, and are good communicators. We need people who are quick to learn and people who can solve problems in ambiguous and vague situations. We need people who know how to learn."

Several years have passed since the American Society for Training and Development sponsored a major study that examined the workplace basics that employers seek from workers. The most essential skill of workers identified in the study was learning how to learn (Carnevale, Gainer, and Meltzer, 1990). This key skill underpins individual learning, team learning and organizational learning in the workplace.

The late Robert M. Smith, more so than any other scholar, brought to our attention the notion that people are unfinished products as learners. From his vantage point, all learners have room for improvement. He described LHTL as an umbrella concept that can be construed as a goal, process, or area of inquiry (Smith, 1990). As a goal, he described it as a means to become more effective as a learner -- regardless of the context that one encounters. As a process, he explained that LHTL processes and activities can be adopted, practiced, and refined by one's self or through the facilitation of others. And as an area of inquiry, he acknowledged the expanding literature base related to LHTL and the need to inform practitioners and policy makers of its significance.

The purpose of this paper is to focus on select components of learning to learn and note recent developments. This paper will examine LHTL as a means of helping workers become more efficient and effective as learners in the workplace. Although it is beyond the purpose of this paper to provide an exhaustive analysis of the LHTL concept, several components will be emphasized:

- Enhancing workers' awareness of "self-as-learner"
- Helping workers become active and assertive learners
- Expanding workers repertoires of learning strategies
- Self-monitoring and reflecting by workers/learners
- Facilitating learning to learn in the workplace
- Creating a supportive learning environment in the workplace

Workers and Their Awareness of Self-As-Learner

The workplace is a hectic environment. Workers in the United States are combatting a variety of stresses and strains that have been brought on by the chaos of their work settings: downsizing/acquisitions/mergers, new technologies, global markets, total quality movements, and so forth. A worker's time is becoming more and more important as a commodity -- especially when it comes to learning in the workplace. Speed, depth and breadth of learning in the workplace are vital issues regarding how knowledge is put to work in an organization (Redding & Catalanello, 1994).

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Building awareness of self as learner is central to learning to learn. Self awareness requires people to step back from the learning processes and take stock of the situation. Self-questioning is a requisite skill for building awareness of self as learner. Workers need to develop a critical eye to detect tacit attitudes, knowledge, and/or behaviors that impede their learning prowess. A helicopter view of learning in the workplace can be prompted by questions such as:

- How am I going about this?
- What seems to be working well?
- Which learning strategies seem to have little utility for me?
- Which alternative strategies might be most effective?
- Which strategies hold the greatest probability of success -- given what I know about the easy or difficult nature of this task?
- What can I predict as an outcome of this?

Reflecting on past learning experiences helps individuals tease out undetected characteristics of themselves as learners. Workers often have set patterns for learning in the workplace. Personal reflection can break down calcified learning habits and patterns. For example, writing a personal learning history is reflective activity that can help individuals critique their prior learning situations. A learning history can be a response to the following types of questions:

- Why am I this type of learner?
- Which past learning experiences have been the most powerful for me?
- What were the characteristics of those experiences?
- Why were some learning experiences easy and effortless?
- Why have other learning situations in the workplace been uncomfortable?

A personal learning history helps track the evolution of a learner. It helps the worker figure out why he/she is "that way" when it comes to learning certain types of tasks or learning under certain types of conditions at work.

Workers as Active and Assertive Learners

Active learners are pioneers and discoverers in the vast territory of learning how to learn. They doggedly seek out the mysteries of their personal learning. Active learners creatively look at a workplace learning situation and ask: What might work best here? How should I react to this milieu? How should I respond to this new information? What can I glean from similar situations? Active learners pay keen attention to the here and now and the subtleties of the work situation. They are aware of the tools that are at their disposal for specific learning tasks at work, and they are responsive to the changing nature of the situation. They seek out idiosyncrasies of learning situations as well as their personal reactions to them, and they store mental notes for the future. They are likely to ask: What inferences can I draw from this that will help me the next time I face a similar situation? What schema or typology can help me mentally classify this experience for recall?

Whereas under-developed and immature learners are more likely to be passive and less efficient in learning situations (De Corte, 1990b), active learners tend to be fluent with several learning strategies and are versatile with their applications. Active learners are more likely to experiment with new learning strategies and take risks. Because of their inquiring dispositions, active learners self-monitor and self-evaluate their progress. For example, active learners assess ways to be taught and select those most conducive to their learning needs. Other strategies include critiquing the systemic processes of their self-directed learning, and seeking feedback from others regarding their effectiveness in collaborative learning. They seek ways to "lubricate learning." That is, they scrutinize learning situations for solutions that might decrease the friction of personal learning processes and overcome their inertia. If they are stumped by a learning situation, they are able to pull back from it, and contemplate alternative paths.

Expanding the Worker's Repertoire of Learning Strategies

People increase their efficiency and effectiveness as learners in the workplace when they can apply a full array of learning skills, strategies, and tools. Learners need to be adaptive to diverse learning contexts at work. Strategic learners can recognize the demands of a learning situation and inventory probable remedies. They have identified and refined deliberate tactics that can be employed for effectiveness and efficiency (Reynolds and Wade, 1986). These metacognitive strategies allow workers to be adaptive and flexible in learning situations.

On the other hand, some individuals are paralyzed in certain contexts because of their narrow band of learning strategies. There is an old expression, "When you only have a hammer, the whole world looks like a nail." The expression implies that one's world-view is delimited by personal resources. If you only have a hammer, then you will probably use it in every possible situation, regardless of the fit between the tool and the task.

In like fashion, if individuals rely on merely a few learning strategies in the workplace, then they are likely to over-use them and apply them in inappropriate situations. Furthermore, certain learning contexts are likely to be avoided by ill-equipped learners. They may consider their existing learning strategies to be impotent against the risks and peculiar aspects of an ambitious learning task.

When workers are proficient with a variety of learning strategies, they are better able to cope with personal learning blind spots, hindrances, and learning deficiencies. Learning strategies can be used as mental prostheses that can prop-up the learner against the demands of the learning task. They permit people to take stock of the actions that embellish their learning in a variety of situations in the workplace, whether or not the situation is tedious, risky, solitary, confrontational, mundane or collaborative.

Workers with a broad array of learning strategies use techniques such as rehearsing before a learning event; anticipating elements of the learning event based on prior experience and knowledge; and considering courses of action, potential outcomes, and respective implications. Learners with these skills have developed an advanced arsenal and a sophisticated system for deploying learning tools and strategies. Using metacognitive strategies as an example, Schmitt and Newby (1986) describe this self-regulatory process as "...checking and evaluating to determine whether the task matches preconceived notions about it, whether selected strategies are working, whether task performance is adequate, or whether comprehension is proceeding as it should." (30) In other words, the worker can dissect the elements of the learning situation and take corrective action as it unfolds.

Self-Monitoring and Reflection by Workers/Learners

Building the competence of workers as learners requires alertness to the processes of learning. People can "keep tabs" of the processes by self-questioning, monitoring, and regulating their learning in the workplace. A system of executive thinking must emerge that questions the parameters of learning in the workplace: Why is this difficult for me? What factors are at play right now? How does this compare to my expectations? What inferences can I make about these results? How do I justify this response? Self-questioning allows workers to scrutinize their learning processes as they occur and creates a critical consciousness of the processes: What are the underlying assumptions here? Why I am I not getting this? Why is this always difficult for me? How can I enhance this reflective experience?

Reflection and self-monitoring link together the senses of feeling and thinking. People face emotional issues as well as cognitive issues when they acquire new information (Shepard and Fasco, 1994) The assemblage of beliefs that helps learners navigate their work environments has been put together from personal experience. This personal reality has shaped the uniqueness of the individual. Learning how to learn includes taking stock of one's personal experience and monitoring the effects of emotions on learning processes. Workers carry around a lot of baggage in the workplace. They must be able to recognize their "hot buttons" and assess the repercussions on their desired learning outcomes.

Facilitating Learning to Learn in the Workplace

Facilitating LHTL includes helping workers become aware of their habits as learners. This includes examining the root causes of learning habits, critiquing their validity, and devising new strategies worthy of experimentation and testing. These functions are not automatically applied by most people in formal learning situations. However, Armour-Thomas and Allen (1993) noted that competence can be gained in LHTL if awareness and use of processes are explicitly encouraged and reinforced through facilitation. Practice benefits LHTL.

How might people begin to reflect on their learning in the workplace? Reflective writing can be used as a facilitation strategy for workers. Reflection-learning journals and autobiographies can help workers critique and examine their learning processes. Reflective writing can extend learning in the workplace. Reflecting on experience as a learner helps one to recognize the genesis of his/her idiosyncrasies of learning (Shepard and Fasco, 1994). Surfacing these habits allows one to analyze and make adjustments as a learner. The journaling process can "prime the pump" and generate a flow of consciousness for people who are struggling to capture the essence of their learning. Facilitators can respond to reflective journals by providing alternative ideas, metaphors, comparative actions, and other constructive recommendations.

Not all adults will benefit from creating reflective journals, particularly those who struggle with the process of writing. Furthermore, some workplaces and/or work assignments might not be conducive to reflective writing. However, the reflective process need not result in the written word. Harri-Augstein and Thomas (1983) endorsed the "learning conversation" as a reflective process for the learner -- a technique of conversing with oneself about the processes of learning. They noted that learners can talk through their processes of attributing meaning to learning encounters:

> Most people are almost totally unaware of how they attribute personal meaning to the displays of public knowledge offered to them in lectures, laboratories, seminars, and work places. Reading, listening, talking, writing, thinking, feeling, judging, deciding, and doing are long established habits that have become so fixed and unavailable to conscious review that learners are almost entirely prisoners of their rigid competencies. (39)

For many adult workers, beliefs about themselves as learners rest in sub-conscious levels of the brain. Seeing one's reflective thoughts through the eyes of another person can be a catalyst for learning to learn. Talking through their learning processes with another person in the workplace can help learners uncover underlying beliefs and assumptions that they hold about themselves as learners (Shepard and Fasco, 1994).

Learners respond to elements of a learning situation according to their field dependency or field independency. The learning climate of the workplace may enhance or delimit the effectiveness of the worker/learner. For example, some workers might be receptive to guidance and direction in work related learning. In contrast, other learners will cherish their independence as learners. Joughin (1992) listed four learner characteristics that are worth noting here for their transferability to workplace learning:

> *Structure*: Learners can be expected to vary according to their need for external structure, their response to provided structure, and their ability to create structure where none is provided.
> *Analytical ability*: Learners should be expected to show marked differences in their ability to master situations in which either the content of learning or the structure/process of the learning situation calls for a high level of analytical ability.
> *Responsiveness to affective considerations*: Learners will vary in their need for supportive environments, in their capacity to use relationships with fellow learners and facilitators, and in their ability to learn from social or interpersonal situations.
> *Authority/responsibility*: Learners should be expected to show varying responses to authority in terms of their readiness to attribute authority to others, their comfort or discomfort in the face of authority, and their willingness and ability to accept personal responsibility for their learning. (13)

The Workplace as a Supportive Learning Environment

De Corte (1990a) maintained that powerful learning environments typically combine a balance of discovery learning and personal exploration on the one hand, and systematic facilitation and guidance on the other. Individual differences in abilities, needs and motivation of workers as learners must be considered in the balance. Supportive learning environments should contain authentic activities that provide insight about the processes of learning to both the learner and his/her mentor or facilitator.

The feasibility of creating a supportive learning environment in the workplace is enhanced when leaders acknowledge the centrality of learning to the mission of the organization. A learning-centered system may be premised on the following four points (O'Banion, 1995-6):

> Learning is a process that is lifelong for everyone and should be examined in a consistent, ongoing manner that is focused on improvement.
> Everyone is an active learner and teacher through collaboration, shared responsibility, and mutual respect.
> The learning process includes the external environment through the development of alliances, relationships, and opportunities for mutual benefit.
> Learning occurs in flexible and appropriate settings (21)

Watkins and Marsick (1993) stated that workers -- regardless of their levels of formal education -- will probably need help in learning how to learn. Skills in learning how to learn are typically not taught in formal learning settings, although people often assume otherwise. Workers need opportunities and guidance in refining their skills at learning how to learn in the workplace -- and such opportunities can be integrated in the workplace through a variety of informal and formal learning activities.

Concluding Thoughts

Learning to learn is an umbrella concept that subsumes topics such as metacognition and metacognitive strategies, learning styles, awareness of self as learner, learning contexts and a host of other issues related to improving the effectiveness and efficiency of learning. Learning to learn can be viewed as a goal, process, and area of inquiry (Smith, 1982). It is a vitally important skill for workers who seek to grow and develop as flexible, adaptive, and lifelong learners.

How does one become proficient in learning to learn? How does one gain competence as a learner in the varied contexts of the workplace? This paper stressed the importance of skill building by the worker/learner and facilitation by coaches and mentors in the workplace. For the individual learner, skills and processes such as self-awareness, self-monitoring, reflection, and active learning were highlighted. For the workplace facilitator, building supportive learning environments and providing ample practice opportunities for workers were recommended.

This writer believes there is something bigger than the previously mentioned processes and skills that engender learning to learn. It is something holistic and it encompasses the ways that learners approach learning situations with people, things and ideas in the workplace. The more one examines the theory and practice of learning to learn, the more one senses that it exalts a unique world-view that is premised on the power of learning.

When people embrace the concept of learning to learn, they observe and interpret phenomena with a heightened consciousness. Their learning processes are the target of personal critique and continuous improvement. For these learners, merely seeking expected outcomes from learning is not good enough. The processes of learning are scrutinized: Can I be better at this? Why is this a struggle? What might work here? Although perfection as a learner is never achieved, when one becomes accomplished in learning to learn, the world never appears the same.

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The Locus of Control in the Adult Learning Planning Process: A Research Agenda

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Adult learning is defined as the process of adults gaining knowledge and expertise based on their personal goals. The general strategy of this paper, and the full monograph version to be developed in the following phase, is to explore and challenge the validity of one of the most popular ideas in adult learning: That individuals want to have control over their learning and that learning increases as a result. Just what do we really know from the research about this core idea of learners controlling their own learning process?

The Premise of Individuals Controlling their Own Learning

One of the most popular ideas in adult learning is that individuals want to have control over their learning and that learning increases as a result. The purpose of this paper is to highlight a literature study and research agenda aimed at investigating the validity of these ideas.

The adult learning thesis is that better outcomes result from adult learning when the learner retains the locus of control throughout the learning phases. The research questions pursued in this paper are: (1) What do we really know from the research about this core idea of learners controlling their own learning process, and how does it play out in practice? And, (2) after reviewing the research in terms of scholarly theory and proven practice, what researchable questions arise?

Cervero and Wilson help set the stage for the discussion in their book, *Planning Responsibly for Adult Education: A Guide to Negotiating Power and Interests (1994).* They note that the literature has been "focused on technical, 'how to' skills, while presupposing some ideally neutral staging area in which these skills will be exercised, and have remained surprisingly silent on the troublesome issues of "what for" and "for whom." They go on to speak more forcefully--"Which people get to decide the purpose, content, and format of the program? Is it always the people with the most power? Is it the adults who will participate in the program, the leadership of the institution sponsoring the program, or the planners themselves?" (Cervero & Wilson, 1994, xii).

The idealism surrounding the concept of adult learners controlling their own learning is most widely attributed to Malcolm Knowles (1975). His book, Self-Directed Learning: A Guide for Learners and Teachers, is considered a classic in education. Knowles (1980) states that, "adult educators must primarily be concerned with providing the resources and support for self-directed inquiry" (p. 19). Regarding his concept of the learner, Knowles further states that, "it is a normal aspect of the process of maturation for a person to move from dependency toward increasing self-directedness, but at different rates for different people and in different dimensions of life. Teachers have a responsibility to encourage and nurture this movement. Adults have a deep psychological need to be generally self-directing, although they may be dependent in particular temporary situations." (p. 43).

These ideas are seen as secondary by some in HRD as increasingly the focus is on the dependent variable of performance. Reaction to this focus is the concern that the feelings and worth of human beings as individuals are ignored by too much emphasis on bottom line results. Additionally, there is evidence that learning or the capacity to learn is a valuable outcome in and of itself and that sponsoring organizations logically benefit. Thus the line is sometimes drawn between those who view HRD as tied to business goals and focused on the bottom line and those who would like to take a more humanistic stance in the matter.

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At the larger perspective, nowhere has it been shown that organizational success is in direct conflict with employee happiness and well-being. And, it is difficult to find a contemporary article about HRD without at least some reference to linking HRD to the strategic goals of the organization (e.g., Gill, 1995). It has been argued that when adult learning decisions about individuals are bounded by rules and requirements of the organization, Adult Education (AE) becomes HRD, and that when the rules and requirements are located in the individual, it is AE. Thus, the core test is contained in the idea of locus of control. If the organization retains the authority to approve or disapprove learning interventions, the locus of control is with the organization and therefore it is HRD. To the point that they are overtly shared, they are both (Swanson & Arnold, 1997).

Strategy and Methodology

Adult learning is defined as the process of adults gaining knowledge and expertise based on their personal goals. The general strategy and methodology of this paper is to explore and challenge the validity of one of the most popular ideas in adult learning: The idea that individuals want to have control over their learning process and that learning increases as a result. Just what do we really know from the research about this core idea of learners controlling their own learning process?

The specific methodology of this paper is to provide a structure that parallels the learning planning process. The following figure, titled "Adult Learners Controlling their Learning Process," provides the framework of this investigation of the literature and the presentation of the following chapters. The outer ring, the ***Theoretical Foundation*** of adult learning envelopes the four phases of the adult learning planning process:

- ***Need*** - Determining what you need to learn so as to achieve your own goals.
- ***Create*** - Creating a strategy and resources to achieve the learning goal(s).
- ***Implement*** - Implementing the learning strategy and utilizing the learning resources.
- ***Evaluate*** - Assessing the attainment of the learning goal and the process of reaching it.

These five elements served as the categories or lenses used to search the research literature for what is and is not known about the locus of control as related to learners controlling their own learning process.

Theoretical Foundation

Learning is a process that has the potential for producing a change in an individual. Knowles (1980) emphasizes that the experience of the learner is the central dynamic to the learning process, with the experience defined as the interaction between individuals and their environment. He further theorizes that learning is an internal process, and those learning experiences which involve the individual in self-directed inquiry will produce the greatest learning. It is in the understanding of how individuals acquire knowledge and learn that learning orientations have emerged. The three orientations being reviewed here-- behaviorist, cognitive, and humanistic-- are not meant to be a comprehensive summary of the literature in this area or an attempt to posit any particular orientation. These orientations are discussed as a means of developing a deeper understanding of the learning theories that have emerged from these orientations.

Behaviorist Orientation. The behaviorist orientation to learning has been well documented and rests on a number of researchers, including Watson, Skinner, and Thorndike. Of these, Skinner is most often recognized as being responsible for developing behaviorism as a theory of learning, primarily for his work with operant conditioning. The key to this concept is the reinforcement of behaviors and the belief that if behavior is positively reinforced, the likelihood that that behavior will be repeated is increased.

In behaviorism, three underlying assumptions about the process of learning are held to be true: (a) Observable behavior rather than internal thought process is the focus of study, learning is manifested by a change in behavior, (b) The environment shapes one's behavior, and (c) Principles of contiguity and reinforcement are central to explaining the learning process (Grippin & Peters, 1984).

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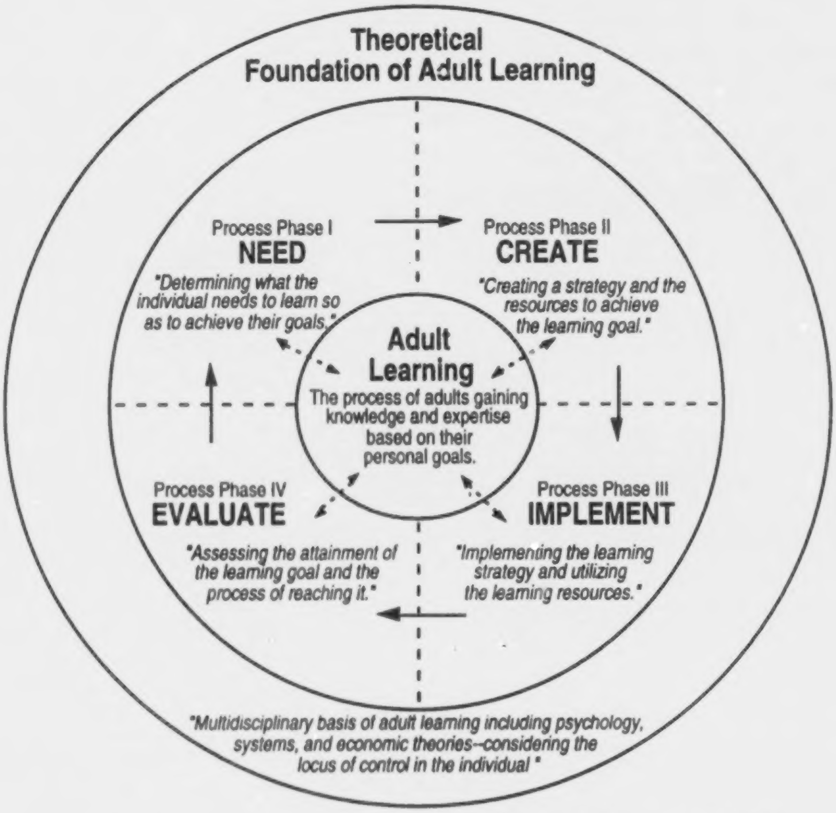
Adult Learners Controlling their Learning Planning Process


Theoretical
Foundation of Adult Learning
Process Phase I
NEED
"Determining what the individual needs to learn so as to achieve their goals."
Process Phase II
CREATE
"Creating a strategy and the resources to achieve the learning goal."
Adult
Learning
The process of adults gaining knowledge and expertise based on their personal goals.
Process Phase IV
EVALUATE
"Assessing the attainment of the learning goal and the process of reaching it."
Process Phase III
IMPLEMENT
"Implementing the learning strategy and utilizing the learning resources."
"Multidisciplinary basis of adult learning including psychology, systems, and economic theories--considering the locus of control in the individual"

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The behaviorist approach to learning is found throughout educational practice. This is true of adult education delivery systems as well, where actions are rewarded based on the observation of an outward behavior. It is also found in organizational settings where training and development, as well are reward systems, are built around a behaviorist orientation.

Cognitive Orientation. While the behaviorist orientation to learning is focused on observable behavior, the focus of cognitive orientations is the internal mental process within the learner's control. The meaningfulness of the learning is also enhanced when it can be related to concepts which already exist in the person's cognitive structure (Merriam & Caffarella, 1991). The underlying principles of a cognitive orientation theorize that (a) individuals construct their own meaning from an experience, (b) cognitive meaning develops in interaction with the environment, and (c) prior experiences direct perception and thus limit learning (Grippin & Peters, 1984).

Cognitivists are interested in how the mind processes, stores, and retrieves information. Since the internal mental structures are key to this orientation, cognitivism becomes a key factor in the study of adult learning from a developmental perspective.

The role of the educator, according to cognitive theorists, is centered on the effective arranging of a sequence of problems that flow according to organic stages of development, as well as providing appropriate resources for the solving of these problems by the learner (Knowles, 1990).

Humanist Orientation. While behaviorist theories focus on observable behavior, and cognitive theories focus on internal mental processes, humanist theories consider learning from the perspectives of the human potential for growth. "Humanists refuse to accept the notion that behavior is predetermined by either the environment or one's subconscious" (Merriam & Caffarella, 1991, p. 132).

The humanist learning orientation is based on the premise that people's perceptions are centered in experience, and that they have the freedom and responsibility to become what they are capable of becoming. It is this unlimited potential for growth and development which becomes the basis of humanist theory. The study of motivation and choice grounding humanist theory are the concepts which drive self-directed learning. The role of educators employing a humanistic orientation involves removing barriers and presenting opportunities for the learner to act to his or her full potential.

This summary of learning orientations provides a basis for discussing adult learning theory. Knowles (1990) presents the relationship between these orientations and learning theory by tying behaviorist orientations to training, cognitive orientations to teaching, and humanistic orientations to self-directed inquiry. While this construct may be beneficial for summarizing teaching models, it may be somewhat limiting in exploring a deeper understanding of the learning theories presented in this investigation. The learning orientation of these theories is heavily influenced by the humanistic models, but behaviorist and cognitive orientations are present as well.

Experiential Adult Learning Theories. The field of adult education is based on an interpretation of adult learning. Merriam (1993), reminds us that we do know quite a bit about adult learning, and research has identified (a) who is most likely to participate in formal learning activities, (b) why they do, and (c) when and where this learning is likely to take place. There is also an increased understanding of the informal and self-initiated learning in which adults engage. The study of the process of acquiring, processing, and utilizing this new knowledge has driven much of the writing and research on adult learning theory and practice.

Brookfield (1986) regards adult learning as "resulting from a transaction among adults in which experiences are interpreted, skills and knowledge acquired, and actions taken" (p. 4). The key to this definition and many others is that adult learning can not be restricted to formal adult education programs. Definitions that restrict adult education to only those programs delivered in organized or sponsored programs are missing the majority of the adult learning experiences. Houle (1992) more broadly purports that "all adults need to learn throughout their lives in order to develop their personal and social potentialities" (p. 317).

These definitions present a challenge to adult educators who need to be creative and innovative in developing skills within adults that allow them to capitalize on learning experiences throughout their lives. Educators must also be comfortable with the notion that much of the learning will take place outside of the classroom. It is this reality, and the notion of learner retained control, that grounds the experiential and self-directed learning theories presented below.

Experiential learning takes place though experience and doing. Kolb (1984) extends this definition to all learning by stating that, "learning is the process whereby knowledge is created through the transformation of experience" (p. 38). His definition offers several aspects to the learning process which provide the foundation for an understanding of experiential learning. By acknowledging that learning is a process, and that knowledge stems from transformation, we begin to understand the continuous process of learning that is implied from experiential learning. According to Kolb, adults acquire information through apprehension (immediate and direct contract with concrete experience) or through detached comprehension of abstract concepts. The transforming dimension describes how information is personalized either through intention (reflective observation) or extension (active experimentation).

Argyris and Schon (1978) extend the concept of experiential learning from the individual to the organization, noting that learning from experience is essential for both individual and organizational effectiveness. They maintain, however, that the key to this learning is an environment where personal values and organizational norms support actions that are based on internal commitment, free and informed choice, and valid information.

In organizations, experiential learning can often be seen in the form of action learning (Lewis & Williams, 1994). Action learning, which is based on the premise of action science is a process for resolving issues where history offers no solution. Real and concrete tasks are used as the vehicle for learning by individuals, groups, or organizations. Unlike traditional classroom-based experience, where the instructor presents a situation and structured methodologies for problem solving, experiential learning asks that individuals be responsible for defining the situation, determining alternative solutions, and finally implementing and being accountable for a course of action.

The Psychology of the Locus of Control. From psychology comes a related concept referred to as locus of control (Rotter, 1966; Rotter, 1990) Locus of control is when "people attribute the cause or control of events to themselves or to an external environment. Those who ascribe control of events to themselves are said to have internal locus of control and are referred to as internals. People who attribute control to outside forces are said to have an external locus of control and are termed externals." (Spector, 1982).

Internals perceive greater control and actually seek situations in which control is possible (Kabanoff & O'Brien, 1980). When it comes to successfully performing a task requiring luck or skill, externals are more likely to choose luck and internals choose skill (Kahle, 1980).

There appears to be a relationship between locus of control and experience. *Internals shift from internal to external after failure, but externals do not shift from external to internal after success* (Anderson, 1977). Phares (1976) notes that internals exert greater control of their environment, exhibit better learning, seek new information more actively, and seem more concerned with information than with social demands of situations. Externals tend to be more nervous than internals (Archer, 1979).

"Locus of control is considered an important personality variable in organizational research and theory (Spector, 1982, p. 493). As such, it is believed to a stable trait, not easily changed.

Thus, basic psychological theory and research frames the paradox between (1) the adult learning ideal of individuals taking control of their learning and (2) the limitations of individuals in taking on that control in planning their own learning process. The following sections focus on reporting the research issues related to this paradox at the needs, creation and implementation, and evaluation phases.

Adult Learners Controlling the Assessment of their Own Learning Needs

"Who needs what, as defined by whom?" is a wonderful way to sum up the issues of needs assessment in relation to the construct of control. Pentland (1977) found that the top four reasons why adults chose to learn on their own were all related to wanting to retain control of the learning process. Needs assessment, the up-front commitment to learning, is the phase with the greatest amount of attention in the adult learning process. In sorting through the discussion, the following taxonomy of control is useful:

Type of Learning	Locus of Control
Unintended Learning	No control
Self-Directed Learning	Learner Controlled
Authority-Directed Learning	Authority Controlled (organization or individual)
Mediated Learning	Shared control between learner and external authority

Even from the needs perspective, the literature will often frame the discussion at an information or in-process level. Rossing and Long (1981) talk about adults accepting or rejecting information (presumably being presented by an authority source) based on their in-process assessment of need for the information or the consistency of the information with their bias. Thus, the level of analysis is at the traffic light level (go, caution, stop), versus a road map level of deciding to take a journey and the nature of the journey (Ohio or Texas by automobile or airplane).

Adult Learners Controlling the Creation and Implementation of their Own Learning

The relevant research literature related to learner control of the creation and implementation is scant. Most inferences must be made from related studies and from the mediated learning-- shared control between the learner and an external authority (usually the instructor).

For example, the effect of individual opinions about the content as learners participate directly in the learning process has been studied. The Spelman and Levy (1966) study related to powerlessness and the distorting impact on learning is quite interesting. In this study heavy smokers learned as much general medical knowledge as the non-smokers but learned significantly less about the relation to lung cancer than non-smokers.

Rosenblum and Darkenwald (1983) concluded from their experimental research that high motivation could lead to high satisfactions and achievement without participant planning involvement. If this was the case, one interpretation could be that involvement at the needs assessment phase may be critical, and that similar learner involvement in the other phases is not that important.

Could it be that self-directed learning decisions as to content and method create high motivation, minimum growth, and high satisfaction? A counter question to the pursuit of adult interest as the basis of learning process decisions is to wonder if such involvement leads to comfort rather than growth.

Adult Learners Controlling the Evaluation of their Own Learning

Evaluation is defined as, "a systematic collection of evidence to determine if desired changes are taking place (Swanson, 1996, p. 26)." In thinking about adult learners controlling the evaluation of their own learning, it is critical to separate learning that they have controlled up to the evaluation phase from learning that has been controlled by others at the need, creation, and/or implementation phase.

Assuming the learner has retained and executed control to this stage, the learner should be asking the evaluation question, "What systematic collection of evidence needs to be carried out to determine of my desired changes took place?" The follow-up question is; "Based on the evidence collected, to what degree did the desired changes take place?" The questions are focused on learning outcomes, not the process of working toward the learning outcomes (formative evaluation).

The learning evaluation literature is careful about noting direct measures of outcomes versus proxy, or related, measures. For example, a direct measure of desired knowledge, skill, and/or attitude (K/S/A) learning outcome would require instrumentation to directly measure the change. An indirect measure of knowledge might be to ask oneself or a participant if they thought they learned a lot or how satisfied they were with their learning. Indirect measures have highly questionable validity. For example, participant self-ratings of learning are not related to actual learning (Dixon, 1990). Even though self-ratings are reliable (consistent), this consistency does not ensure related to validity or actual outcomes.

Thus, if the adult learner relies on *self-assessment* proxy measures of outcomes, they will most likely make false conclusions based on invalid data. Worse yet, if the adult learning professional, serving as a resource to the adult learning process, relies on even more indirect measures of perceptions and feelings about desired changes to have taken place, the problem is compounded. Examples of such highly questionable evaluation practices relying on secondary sources of perception data are reported in a recent adult education book (see Cervero & Wilson, 1994, p. 60-61, 86-87, 111-113).

The adult learner wanting to retain control over the evaluation process while gaining valid data will, in most instances, have to reach outside his or her internal reference to gain rational evaluation data. Obtaining direct measures of K/S/A from formal tests or expert judges would be the most likely alternatives. In many avocational realms of personal development, interest groups provide external measures of skill through competitive judging (e.g., car shows, stamp shows, dance competition). At a less threatening level, experts serving as mentors provide similar evaluation.

The humanistic side of the evaluation literature has had a resistance to summative, outcome evaluation. Instead, the formative evaluation view is that evaluation should be diagnostic and have the purpose of improving learning, rather than simply determining if the desired changes took place (Bloom, Hastings, & Madaus, 1967). As such, formative evaluation is displayed in the figure as the feedback and feed forward arrows between the various phases of learning. Again, the purpose is to increase learning.

A Proposed Research Agenda

Our preliminary efforts at reviewing the adult learning literature parallels the findings of Cipicchio (1992). Her extensive review of the literature culminated with the conclusion, "..that the adult learning research supported a limited number of theories and contained few systematic research efforts" (Cipicchio, 1992, p. 37). Exploring the gaps between expoused theories and knowledge obtained from research is the primary basis for the following proposed research agenda related to adult learners controlling their learning. This agenda can be used for a more extensive review of existing research and for directing new research.

Needs Assessment

1. What are the best means for adult learners to self-assess valid learning needs?
2. Given the best means of self-assessing valid learning needs, what is the effect of the needs on phases II, III, and IV of the Learning Planning Process?

Creation and Implementation

1. What are the best means for adult learners to create and implement valid strategies for achieving their learning goals?
2. Given the best means of creating and implementing valid strategies, does their use confirm the utility of phases II and III and what is the effect on the level of learning in phase IV?

Evaluation

1. What are the best means for adult learners to conduct valid self-assessment of their learning?
2. Given the best means of valid self-assessment of learning, what are the effects of executing that self-assessment on the level of learning in phase IV?

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Goal Integration in a Multi-divisional Organization

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Goal-setting is one of the most researched topics in the behavioral sciences. This study goes beyond traditional goal-setting studies to examine how goals are integrated into organizational activities once they are identified. A model of goal integration is proposed and a construct for assessing how goals are used to guide work performance is developed. In an effort to validate the model, we report the results of an initial empirical examination of the goal integration construct undertaken in a multidivisional organization.

The topic of goal-setting has been examined by researchers from several disciplines, most extensively by those in the fields of industrial psychology and management. Psychologists have studied goal-setting at the individual level using experimental designs in laboratory settings. In these studies, goals are determined by the experimenter in advance, commitment to the goals is routinely obtained, and the goals apply to simple, straightforward tasks. Although these studies have provided an extensive knowledge based on goal-setting at the individual level (Locke and Latham, 1990), they admittedly fail to capture the organizational context in which performance goals are adopted. On the other hand, goal-setting research in the field of management has been conducted almost exclusively in the field where the unit of analysis is typically the organization, rather than the individual (Richards, 1986). Because controlled conditions are difficult or impossible to achieve in organizational contexts, correlational and case study research methods have been used. Unlike laboratory studies, organizational research must accommodate multiple goals that span various timeframes where commitment to goals cannot be assumed.

Research in both disciplines focuses on goal setting—in psychology at the individual level and in management at the organizational level. Yet, neither stream of research tells us much about what happens to goals once they are identified.

Most studies of organizational goal setting do not advance our understanding of how goals are adopted and implemented at sub-strategic levels in the organization where work is actually carried out. Little emphasis has been given to assessing how closely organizations follow newly-adopted goals. Consequently, questions arise about the nature of goal integration in organizations. Some goals are embraced by the organization and are quickly adopted and used to drive organizational performance, while other goals are virtually ignored. What factors lead to the effective use of goals? Are goals more likely to be followed if performance against them is measured? This study examines factors related to how goals are integrated and used to guide performance.

The Role of Performance Measurement

Performance measurement is a common strategy for examining goal-directed behavior in organizations. Performance measures are established to assess progress toward goal attainment (Drucker, 1973; Odiorne, 1985). Commonly used measures are financial indicators, measures of customer service, employee performance, productivity, resource utilization, and long-term growth. Although they provide valuable metrics for measuring performance in many situations, there are several reasons why performance measures are limited in their ability to assess progress toward goal attainment.

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First, many organizational activities and processes are not easily measured. Some processes are too sophisticated and dynamic to be captured by performance measures. How, for example, is new employee development measured? Although critical to the long-term success of organizations, how do we assess improvement in organizational culture? How do we measure progress in identifying a new strategic direction for the organization? These processes are multi-dimensional and interact with other organizational processes as they unfold, and consequently, they defy the precise measurement of traditional performance metrics.

Second, it is difficult to have confidence in measures of long-term efforts where outcomes occur well into the future. Many organizations must work toward long-term goals in which the time between planning and outcomes spans several years, such as with multi-year construction projects and research-intensive development programs. It is difficult to prescribe definitive performance measures for long-term efforts where goals are likely to change over time. This study proposes an alternative to performance measurement that helps to show how goals are integrated into the organization and used to guide performance.

Research Questions

The purpose of the study is to advance our understanding of how goals become part of the behavioral repertoire in organizations once they have been identified. To address this, the first research question is:

- *How is goal integration assessed in organizations?*

The construct of *goal alignment* was developed and operationalized in this study as a way of assessing goal integration. Goal alignment occurs when the same goal is identified as a significant guide to work behavior at all the organizational levels to which the goal applies. Goal alignment is typically considered a desirable feature of systems for managing organizations because it facilitates the coordination of key work activities at different levels of the organization. Goal alignment focuses organization members on the strategy identified for meeting the organization's goals (Odiorne, 1985). Goal alignment can facilitate the sharing of information, knowledge, power, and rewards needed for high levels of employee involvement (Lawler, 1992). It is also an important precursor to aligning work processes and human resource policies that are mutually supportive (Pasmore, 1988). In addition, goal alignment provides a basis for linking diverse functional activities with core performance outcomes (Steele, 1995).

Organizations differ with respect to how well goals are aligned from level to level. Although several factors would seem to be related to goal integration, which factors actually lead to the effective alignment of goals? Is the alignment of newly-adopted goals a function of the work to which the goals apply? Is goal integration more a function of the goal orientation of the personnel to whom the goals apply? That is, are some employees more likely to embrace goals than others? Or are goals more likely to be followed if performance against them is measured? To examine the relationship between these factors and goal alignment, we posed a second research question:

- *What factors are associated with goal alignment?*

We have no conceptual model for how performance goals are adopted and implemented once they have been identified. We proposed a model of goal integration described in the next section. In an effort to validate the model, we report the results of an initial empirical examination of the validity of the model undertaken in a multidivisional organization. Finally, we critique the proposed model and offer an agenda for future study in this area.

A Model of Goal Integration

The model in Figure 1 provides a conceptual road map for exploring the factors associated with how goals are integrated into organizational activities to guide performance. In addition to goal alignment and performance measurement, other variables are represented in the model that are proposed to influence goal integration in organizations (see Figure 1., *A Model of Goal Integration*). Each of these concepts is described and defined in operational terms below.

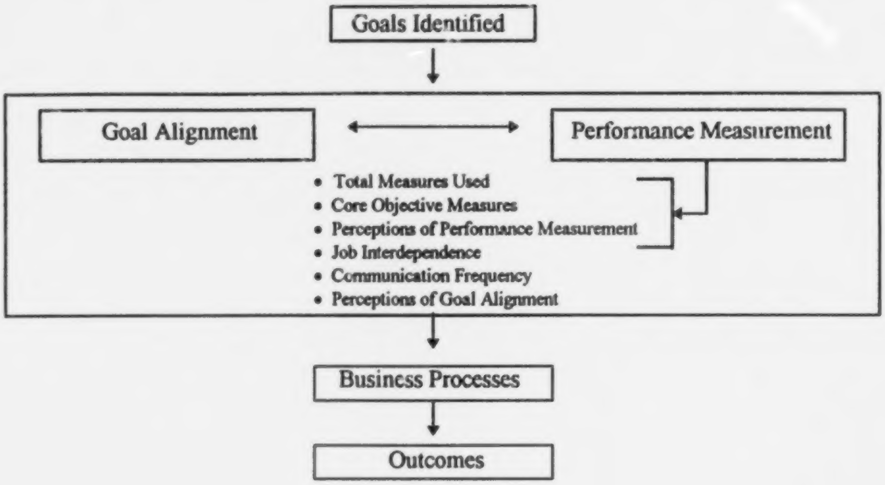

Goals Identified
Goal Alignment
Performance Measurement
Total Measures Used
Core Objective Measures
Perceptions of Performance Measurement
Job Interdependence
Communication Frequency
Perceptions of Goal Alignment
Business Processes
Outcomes

Figure 1. A Model of Goal Integration

Goal Alignment. Goal alignment occurs when the same goal is identified as a significant guide to work behavior at all the organizational levels to which the goal applies. Goal alignment is typically considered a desirable feature of systems for managing organizations because it facilitates the coordination of key work activities at different levels of the organization.

No formal metric for assessing goal alignment appears in the literature. A construct for assessing goal alignment was developed for this study. Goal alignment was determined by obtaining goal statements from those at each organizational level and comparing the goals for consistency across levels. Questions were posed to all interviewees asking them to state the most important goals at their level of the organization and at the organizational level above them. Reflecting this bi-level approach to questioning about goals, each employee was asked to state the most important goals at two levels--the level of their own job ("what key functional goals should *you* be addressing?") and, at the level of their immediate superior's job ("what key functional goals should *your superior* be addressing?"). Because each interviewee was asked not only about his/her job goals, but also about divisional goals at the next level up, direct comparison of goal statements from level to level was possible.

This type of questioning about goals was used with employees at four organizational levels: (a) the top executive of the organization, (b) divisional managers, (c) supervisors within divisions, and (d) the employees of each supervisor. Collecting data from each employee on goals at their level and the one above them allowed direct comparison of goals for consistency (i.e., alignment) from level to level. A model showing this method of determining goal alignment is presented in Figure 2., *Model for Determining Goal Alignment.*

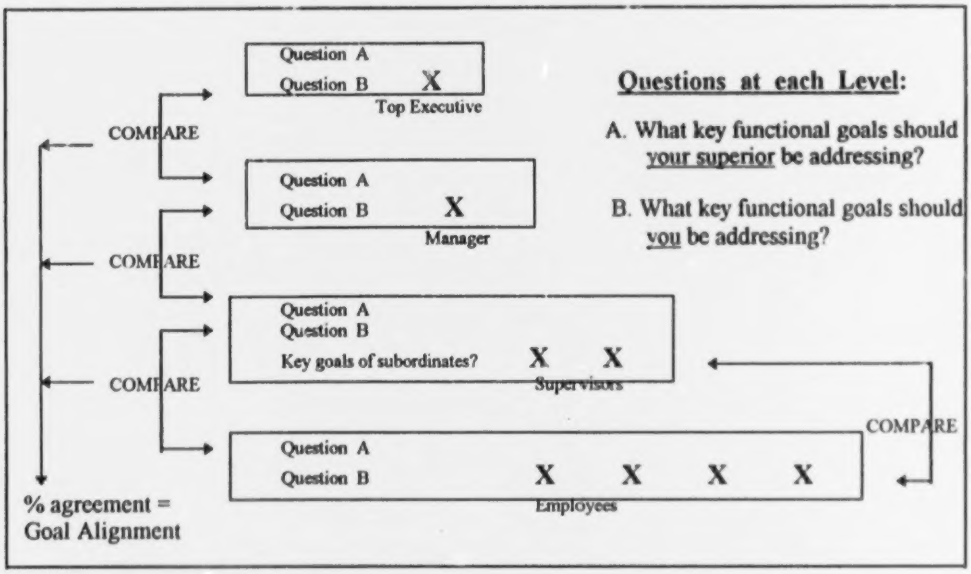

Question A
Question B X
Top Executive
COMPARE
Question A
Question B X
Manager
COMPARE
Question A
Question B
Key goals of subordinates? X X
Supervisors
COMPARE
Question A
Question B X X X X
Employees
COMPARE
% agreement =
Goal Alignment
Questions at each Level:
A. What key functional goals should your superior be addressing?
B. What key functional goals should you be addressing?

Figure 2. Model for Determining Goal Alignment

The comparison of each respondent's goal statements with those of their superior was expressed as the percentage of the total number of goals in which there was agreement from level to level. A superior and subordinate together specifying a total of six goals for which they agreed on four would yield a goal alignment of 0.6 (or 60% agreement). Goal alignment scores were obtained for each employee interviewed at the four organizational levels. Employee scores for goal alignment were aggregated within each division and then compared across each of five divisions of the organization studied to examine factors associated with goal alignment.

Performance measurement is the second major construct in the proposed model of goal integration. Because examining the relationship between goal alignment and performance measurement is central to this study, we broke down the notion of performance measurement and operationalized it as three distinct constructs: total number of performance measures used, core objective measures, and perceptions of performance measurement. This allowed us to examine more precisely the dimensions of performance measurement that might be related to goal alignment.

Total measures used. A credible model for performance measurement that provides a taxonomic structure for organizing performance measures is the "balanced scorecard" developed by Kaplan and Norton (1992). This research-based model is increasingly used to develop comprehensive performance measurement models for organizations. The balanced scorecard groups specific performance measures into four distinct categories: measures from the *customer's* perspective, *financial measures,* measures of *internal business processes,* and measures of *innovation and learning.* Using these four categories as a starting point, we developed a 33-item instrument to assess the total number of performance measures used by each of the five divisions of the organization studied. Of the performance measures listed, those circled by respondents was totaled for each survey completed.

Core objective measures. This measure indicates the degree to which performance measures used by each division focus on their core objectives. The core objectives for each division were taken directly from goal statements obtained from interviewing division managers. The core objectives for each division were expressed in 3-4 statements that identified the core purposes and outcomes to be achieved by each division of the organization. The performance measures circled on each survey were compared against the core objectives for the respondent's division to determine the extent to which the measures were linked to core objectives. Clear statements of core objectives for each division allowed the specific performance measures circled by respondents to be readily linked with objectives. Performance measures that were directly linked to core objectives were identified and totaled for each survey. The value for "core objective measures" is the percentage obtained from the ratio of "measures linked to core objectives" over the "total number of measures used."

Perceptions of performance measurement. The third construct associated with performance measurement is the perceptions of employees and managers about the use of performance measures in their areas. The attitudes of personnel about performance measures were expected to vary with respect to employees' need for autonomy and the relative value employees placed on the guidance and structure provided by performance measures. Using a 7-point Likert scale, employees responded to four items assessing their perceptions of performance measurement. An example of a survey item for this variable is "I believe that the use of performance measures is essential to the effectiveness of the function for which I am responsible."

Job interdependence. Job interdependence is the degree to which employees rely on each other to accomplish their work. High "job interdependence" exists when one's job effectiveness greatly depends of the efforts of coworkers. Employees whose jobs are interdependent must coordinate their activities with one another, and must insure that their individual work products collectively contribute to a common goal. Thus, goal alignment is expected to be greater in areas characterized by high job interdependence among employees. An example of a survey item for this variable is "My job effectiveness is strongly dependent on close cooperation with my co-workers."

Communication frequency is the degree of work-related communication that occurs among those who work together within a particular department or work group. Work-related communication (personal contact, telephone, written, electronic) among co-workers generally improves understandings and expectations about common goals. This relationship is based on the premise that creating a culture of open and frequent communication and exchange among employees will enhance a sense of common purpose and goal alignment (Schein, 1992). Thus, areas in which co-workers communicate frequently about their work should be characterized by a greater degree of goal alignment than areas in which communication among co-workers is infrequent.

Perceptions of goal alignment. Individuals differ in the value they place in having their work activities guided by goals that are aligned from level to level within the organization. The value employees place on goal alignment spans a continuum that ranges from those who seek autonomy and independence in their work based on their internal goal orientation to those who prefer the structure and sense of common purpose that clearly aligned goals provide. We proposed that employee perceptions of goal alignment is a factor that influences the degree of goal alignment achieved in organizations. Areas in which personnel hold positive perceptions of the value of goal alignment should show much stronger patterns of goal alignment than areas that do not. An example of a survey item for this variable is "I believe that my functional job goals should be closely aligned with departmental and organizational goals."

Methodology

Research Setting. A service organization with multiple goals that vary in complexity was purposefully chosen as the research setting. This setting was the Facilities Management (FM) department of a Midwestern, land-grant university which employs 392 personnel in five separate divisions. The divisions provide project design and management for architectural and engineering services; custodial and cleaning services; environmental climate control systems; utilities services (power and steam) university-wide; and building maintenance. The availability of five divisions providing such diverse services allowed us to examine the relationships between the variables in Figure 1. in a single organization where divisions operated autonomously and pursued diverse goals. Expected differences among the five divisions on the extent of goal alignment, performance measurement, and other variables allowed a unique opportunity to study how goals are integrated in these settings.

Data Collection. Data was collected throughout the FM organization on a division-by-division basis. Beginning with top managers and working down through supervisors and hourly employees, those at all hierarchical levels participated in interviews and surveys. As the focus of the study was on factors related to how goals were integrated throughout the organization, it was important to collect data at all organizational levels, paying particular attention to collecting data on goals and performance measures from all managers and supervisors.

Interviews. Purposeful sampling was used to insure data collection from all managers and supervisors throughout the organization. Interview data were obtained from a total of 119 employee of the FM organization for whom both interview and survey data existed. 55 interviewees were management employees and the remainder were non-management employees. Data from non-management employees was evenly distributed across the five divisions with at least 10 employees interviewed in each division. This data collection strategy allowed both complete collection of data from management (96% of management employees completed interviews and surveys) and a representative sample of data from employees in the five divisions. Interviews provided data on variables possibly related to goal integration that were eliminated from the study because they were not relevant to the organization.

Surveys. Surveys completed by the 119 management and non-management employees who had also been interviewed were used for data analysis. The survey included multiple items addressing each of the following variables: job interdependence, perceptions of goal alignment, perceptions of performance measurement, communication frequency, and total measures used. Employees completed 7-point Likert scale responses for items on *job interdependence*, *perceptions of goal alignment*, and *perceptions of performance measurement.* Open-ended items were used for *communication frequency* and *total measures used* that allowed respondents to give actual frequency values for the types of communication and the types of performance measures they use in their work. The variable, *core objective measures,* was calculated from responses to *total measures used* by comparing performance measures to core objectives as described above.

Data Analysis. Mean scores of all variable by division, analysis of variance for goal alignment by division and a correlation matrix for all variables appear in the following tables. Results are discussed in the sections following the data tables. Divisions of the FM organization were expected to differ with respect to how well goals are aligned from level to level. A strong pattern of alignment may indicate goals that provide clear, consistent guidance for performance. Similarly, lack of goal alignment might represent lack of agreement or consistency among goals from level to level. Table 1 shows the mean scores for all variables by division.

Table 1. Mean Scores for All variables by Division

Variables	**Control**	**Maint**	**A & E**	**Custodial**	**Utilities**
Goal Alignment	4.70	3.00	7.11	7.00	5.25
Total Measures	7.67	21.14	10.3	16.38	19.83
Core Object Meas	6.20	2.84	8.68	8.10	5.40
Perc Perf Measur	15.9	13.5	16.67	22.64	20.08
Job Interdepend	17.7	13.5	24.56	19.64	19.58
Communic Freq	60.44	61.42	26.22	52.53	53.5
Perc Goal Align	20.0	12.6	19.22	20.28	22.25

n = 119

Table 1 shows a large contrast in mean goal alignment scores between the A&E and Custodial divisions (7.11 and 7.00 respectively) and that of the Maintenance division (3.00). The analysis of variance for goal alignment by division (see Table 2) indicates significant differences in means between these divisions.

Table 2. Analysis of Variance for Goal Alignment by Division

Source	df	MS	F
Between Groups	4	31.13	5.61***
Within Groups	50	5.54	
Total	54		

****p < .001*

The one-way ANOVA reveals significant differences between goal alignment means and division (F = 5.61, p < .001). To determine which group means differed significantly from each other, a Tukey's HSD was done. The results indicate that A&E had a mean of 7.11, which was significantly higher than the mean goal alignment for Maintenance (mean = 3.0). In addition, Custodial had a significantly higher mean (7.0) than Maintenance (3.0). There were no significant differences between goal alignment means for other divisions.

Figure 3. Means Scores for Goal Alignment and Core Objective Measures by Division

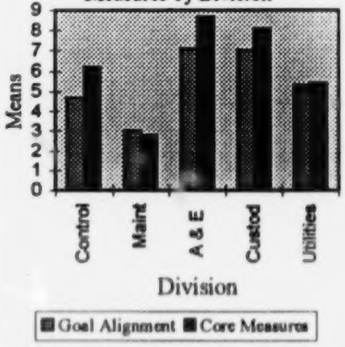


Figure 4. Mean Scores for Goal Alignment and Total Measures by Division

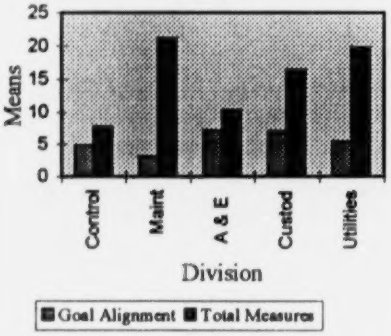
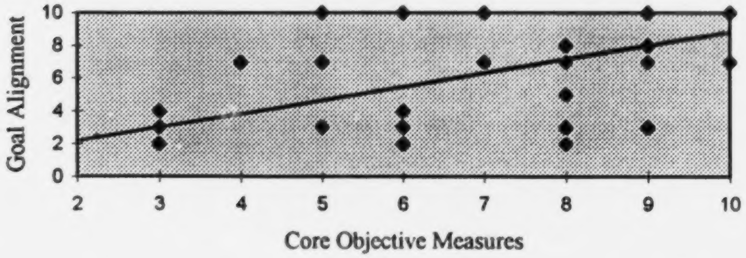


Figure 5. Scatterplot for Goal Alignment and Core Objective Measures



r = 0.42, p < .05, n = 119

Discussion

The Construct of Goal Alignment. Due to the limits of performance measurement, particularly with respect to abstract and long-range goals, *goal alignment* was conceived as a technique to be used as an alternative to performance measurement for assessing how goals are integrated and used to guide performance.

This construct was developed in such a way as to avoid the negative implications associated with top-down, compliance models of goal-directed behavior. These models frame goals as instruments of management control to which organizational compliance is expected. Goals are adopted by top management and cascaded down through the organization. In these models, goal alignment is determined by first identifying the goals imposed by management, and then seeking evidence of compliance with these goals at lower levels of the organization.

Contrary to this top-down approach to goal alignment, the construct presented here is an "ascending model" of goal alignment in which people identified their own goals and then looked to higher levels of the organization to identify the goals of their superiors. Respondents in the study were asked to look up into the organization and could only identify goals at higher levels if this type of knowledge was regularly shared with them. Employees of divisions with higher goal alignment had a much broader perspectives of the operations and direction of their division than employees in divisions with low goal alignment. The widespread sharing of information, knowledge, and decision making was apparent through interviews with those in divisions with high levels of goal alignment. Thus, the ascending model of goal alignment developed here is consistent with principles of employee empowerment and participatory management, where the sharing of information, knowledge, power, and rewards are prerequisites to developing high levels of employee involvement (Lawler, 1992).

Factors Associated with Goal Alignment. The construct validity of a newly developed measure, such as *goal alignment*, is enhanced if it can be shown to be related to an existing construct for the same phenomenon (Cook, Campbell and Peracchio, 1990). Performance measurement (i.e., *core objective measures)* assesses the degree to which goals guide work behavior, and as such, has construct validity for the phenomenon of goal integration. Six variables were examined to determine the extent of their relationship with goal alignment (see Figure 1., *A Model of Goal Integration).* A positive correlation was found between *goal alignment* and *core objective measures* ($r = 0.42$, $p < .05$). *Goal alignment* and *core objective measures* are both indicators of progress toward goal achievement. *Core objective measures* indicate the degree to which the performance measures used by an organization focus on their core objectives and is an index of the importance of the performance measures used by a division. Emphasis on *core objective measures* could be expected to help employees identify and focus on the key goals chosen by their division to guide work behavior. Thus, we would expect greater agreement on goals (i.e., *goal alignment)* in divisions with higher *core objective measures* ratings. The positive correlation found between *goal alignment* and *core objective measures* contributes to the construct validity of the *goal alignment* construct developed in this study.

No other statistically significant associations were found between goal alignment and the other variables examined. The lack of relationship between *goal alignment* and *total measures used* (see Figure 4) is consistent with the observation that it is not *how much* you measure, but *what* you measure that is crucial to goal achievement. Research has found that companies rarely suffer from having too few performance measures. It is more beneficial to focus on a limited number of measures that are critical to achieving desired goals (Gunn, 1993; Kaplan and Norton, 1992).

Implications for Future Research

This research developed and operationalized the construct of *goal alignment.* Goal alignment is particularly important given the limited ability of traditional performance measures to adequately assess the subtle and diverse processes organizations use to achieve their goals. The goal alignment construct represents a flexible technique that can be used to compliment performance measures in areas where change and sophisticated processes cannot be precisely measured. Our examination of the goal alignment construct in the FM organization found that divisions differed in their degree of goal alignment and that goal alignment was positively related to *core objective measures* across the FM organization. This relationship between goal alignment and core objective measures may suggest that employees at different organizational levels are more likely to agree on key functional goals if they are clearly associated with a limited number of well-focused performance measures. Thus, emphasis on core measures of performance appears to be an important determinant for achieving goal alignment in organizations. Yet, further research is needed to examine the following dimensions of the goal alignment construct.

Factors within Divisions related to Goal Alignment were not Explored. While ratings of goal alignment were significantly higher for the A&E and Custodial divisions than they were for the Maintenance division, the reasons for these differences *within each division* are unclear. Limitations in sample size prevented us from exploring the relationships between the variables in Figure 1 and goal alignment within each division. Future research on goal alignment should move beyond a single organization to multiple organizations that allow larger sample sizes so that factors related to goal alignment can be investigated within organizational units.

Goal Alignment and Employee Participation. Because the *goal alignment* construct required respondents to look up into the organization, they could only identify goals at higher levels if this type of knowledge was regularly shared with them. Anecdotal information obtained from interviews indicated that goal alignment was related to the degree to which knowledge, information, and decision making was shared among employees within divisions (i.e., the degree of employee participation). Employees of divisions with higher goal alignment held broader perspectives of the operations and direction of their division than employees in divisions with lower goal alignment. However, no conclusions about the relationship between goal alignment and employee participation can be made based on this study because data on the degree of employee participation in the FM divisions was not systematically collected. Future research should explicitly examine the relationship between employee participation and goal alignment. How does participation facilitate goal alignment? While employee involvement appears to enhance goal alignment at multiple levels of the organization, the specific mechanisms of this dynamic need further study.

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The Roles of Consultants in Gainsharing Firms: Model Development

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Gainsharing, in its many formats, is designed to return a portion of an organization's success to employees. In spite of extensive research, the role of the organization development consultant in gainsharing has not been explored. In this paper, a model for such involvement is proposed in anticipation of further research to explore the roles actually performed.

Changes in the business environment in the 1980s led to adoption of some form of gainsharing plan by a number of firms in the U.S. First, global competition placed U.S. business and industry under enormous pressures. Second, business strategies, management methods, including human resource practices, and modes of operation, were transformed due to deregulation in key industries. Third, technological advances significantly affected U.S. services and manufacturing industries. Fourth, Japanese management style, such as teamwork and the Kanban system, was perceived as a key to Japanese firms' international preeminence by U.S. business and industry leaders (Perry & Kegley, 1990).

In addition to these environmental changes, gainsharing was adopted widely because it was reported to improve cooperation (Lesieur, 1958), lateral communication (DeBettignies, 1987; Masternak & Ross, 1992; Ross & Hatcher, 1993), labor and management relations (Daigenault, 1952; Doherty, Nord & McAdams, 1989; Dowd, 1955; Nightingale, 1982), quality (Doherty, Nord & McAdams, 1989; Masternak & Ross, 1992; Ross & Hatcher, 1993), cost (Masternak & Ross, 1992), productivity (Doherty, Nord & McAdams, 1989) and profits (Jehring, 1967; Moore, 1976; Schulhof, 1979; Yarbrough, 1987).

A number of research studies have reported on gainsharing firms in North America. Imberman (1992) reported the estimation by the American Management Association that at least 2,000 firms were using some variety of gainsharing plan. Freud and Epstein's (1984) research, originally designed to discover the extent of use of innovative human resource management systems, found that 15% of approximately 700 firms with 500 or more employees had some form of gainsharing. According to Ost (1990), 30 of 102 U.S. firms (29%) had some form of gainsharing plan. Nickel (1990) found that 33% of 212 firms had a gainsharing plan. Lawler and Cohen (1992) reported that 39% of Fortune 100 firms relied on some form of gainsharing program. Long (1989) conducted a study of 5,000 Canadian firms. Almost ten percent (9.7%) had adopted some form of gainsharing. The past six years had seen the adoption of 70% of the gainsharing plans. A survey by Alexander Consulting Group (1992) showed that, other than in health care, gainsharing was mentioned by HR management as the most important HR topic in the 1990s, ahead of employee diversity, corporate culture, work redesign, and other contemporary issues.

Gainsharing is generally composed of three components: a financial formula that serves as a basis for bonus payments, a formal employee involvement program, and teamwork. The financial formula and employee involvement are often emphasized and specified in gainsharing. Teamwork, however, is often neglected in implementation of gainsharing plans, although implicitly embodied. The predominant forms of gainsharing plans are the Scanlon, Rucker, and Improshare Plans, though hybrid plans customized on the basis of one or more of these prototypes greatly outnumber the basic forms.

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The Scanlon Plan was developed by Joe Scanlon, a union leader in the steel industry in the 1930s, as a mechanism to turn around financially troubled plants. It typically uses a fairly simple bonus formula based on the ratio of labor costs to sales or production so that it is easily calculated, administered, and understood by employees. A shop-floor level committee encourages employees to make suggestions and, once received, reviews them and makes final decisions on whether or not to implement the suggestion. The plantwide committees with joint union-management representation act on suggestions exceeding certain cost limits, review business problems, formulate strategic plans for improving productivity, and administer the bonus plan (Bullock & Lawler, 1984; Doyle, 1982; Lawler, 1986; Milcovich & Newman, 1987; Shaw & Schneier, 1995).

The Rucker Plan was designed by Allen Rucker in the 1930s. The Rucker Plan involves a less developed participative philosophy and structure than the Scanlon Plan. Some plans may adopt both production and screening committees; other plans have just the screening committee (Bullock & Lawler, 1984; Hammer, 1988; Lawler, 1986; Milcovich & Newman, 1987). Metzger (1980, cited in Welbourne & Gomez-Mejia, 1995) noted that "the Rucker Plan pays a bonus when a value added gain is realized. Value added is defined as sales minus raw materials and services procured outside of the company" (p. 11).

Improshare (improved production through sharing), which was developed by an industrial engineer, Mitchell Fein, focuses on sharing physical productivity gains with employees. The bonus formula is based on savings in hours required to make a unit of product. Improshare differs from other types of gainsharing in that its bonuses are paid weekly, which makes a link between performance and rewards more immediate than under the Scanlon and Rucker Plans (Bullock & Lawler, 1984; Kaufman, 1992; Lawler, 1986; Milcovich & Newman, 1987). Improshare, while not opposed to employee participation, considers it to be an outcome of the aggregate bonus plan (Fein, 1991).

The custom-designed programs offer a greater chance for success because of (1) fit with the situation, (2) the opportunity for employees to be involved at the start-up, and (3) the enhanced understanding and commitment that design involvement brings (Bullock, 1983). Research by O'Dell & McAdams (1987) showed that more than 42.7% of all gainsharing plans and 58.9% of those in service organizations were customized in order to mesh with the organization's specific attributes.

Miller and Schuster (1987) reported that Productivity and Waste Bonus, Group/Plant, and DARCOM Plans also belong to gainsharing, primarily focused on economic incentives. Productivity and Waste Bonus plans are concerned with productivity and quality so that productivity gains do not result in deterioration of product quality. Similarly, Tomkins Associate Incorporated (1990) presented Goalshare, Family of Measures, and Multi-Cost Plans as types of gainsharing with a focus on physical performance rather than financial performance. In Goalshare, a bonus is determined based on the performance of target goals, such as labor productivity, scrap, and customer service. For example, if a customer service rating is between 95% and 96%, a 0.5% bonus of total payroll costs is given to employees. In Family of Measures, a bonus is given to employees after calculating total savings from labor productivity, scrap, returns, and warranty payments. Similarly, in a Multi-Cost Plan, total savings are calculated in terms of energy, scrap, maintenance, overtime, and returns/warranties, and then a bonus is determined.

Gainsharing plans are used to improve organizational processes and effectiveness and as a survival strategy to respond to external environmental changes. A number of firms have become dependent on internal and external consultants to assist in this transformation process. A number of consulting firms specialize in gainsharing. However, there has been little research on the roles of consultants in gainsharing firms, especially the effects of consultants on organizational processes and effectiveness.

Research Question

In this context, a major research question is: What are the roles played by internal and external consultants in gainsharing firms in order to improve organizational processes and effectiveness? While this question will be answered empirically in another paper, in this paper, a theoretical basis for answering this question, along with a proposed model, will be presented.

Theoretical Framework

In order to explain the roles played by a consultant in gainsharing firms, two models, gainsharing and action research, are utilized. Hammer's (1988) gainsharing model focuses on the role of bonuses and employee involvement in gainsharing plans, while an action research model (McLean & Sullivan, 1989, cited in Rothwell, Sullivan, & McLean, 1995) deals with the role of consultants in the various stages of Organization Development (OD) interventions.

Hammer (1988) developed a gainsharing model with a focus on the roles of employee participation and productivity. A major advantage of this model is that it incorporates a cyclical process from program acceptance to commitment to the program with an individual-based motivation model. The motivational model is based on expectancy theory constructs, such as efforts (employee efforts), performance (productivity improvements), and outcomes (bonus payments). According to the model, "participation-direct worker involvement in and influence over work process and productivity issues-leads to three outcomes" (Hammer, 1988, p. 346). Two factors lead to productivity improvements, and a third factor brings about information sharing and employee empowerment. The first factor is "the identification of obstacles to improved productivity, the solution to performance problems, and agreement on work-related actions and behavior to overcome the obstacles. The participation process results in a set of accepted, specific work performance goals"(Hammer, 1988, p. 346). The second outcome, intrinsic motivation, has a more ambiguous status in a gainsharing model. If we assume that "involvement in and influence over organizational decision making is intrinsically motivating, employees will be motivated to participate, but they will not necessarily be more motivated to do the work they are supposed to do at the point of production" (Hammer, 1988, p. 347). The third outcome is the empowerment of nonmanagerial employees through their access to managerial level information. Effective employee participation creates pressure on management to open communication and share information with labor. Improved planning and organization of work derive from participation in gainsharing plans. The productivity improvements lead to bonus payments, which, in turn, influence two factors affecting productivity improvements. Bonus payments directly enhance trust in management and commitment to the plan, which is also affected through information sharing and employee empowerment. One limitation of this model is that it does not go into details of the impacts of gainsharing on the company, except mentioning productivity improvements and trust in management.

An action research model (McLean & Sullivan, 1989, cited in Rothwell, Sullivan & McLean, 1995) illustrates the role of consultants in the various stages of OD interventions. According to them, an action research model consists of eight steps of (1) entry, (2) start-up, (3) assessment and feedback, (4) action planning, (5) intervention, (6) evaluation, (7) adoption, and (8) separation.

The entry stage is featured by searching and marketing. An external consultant scans the business environment to identify organizations or parts of the organization that are currently undergoing crisis and desire change. Or an internal consultant may be contacted for help by a manager with specific problems or opportunities. At the start-up stage, the consultant enters the organization and lays the groundwork for the change by identifying what change is desired, when it is desired, who desires or who opposes it, and what rationale explains the desired change. The consultant at the assessment and feedback stage collects data and helps organizational members identify its problems and opportunities by determining what domains of the organization are to be examined, using appropriate processes to collect data, analyzing and interpreting data, giving the client feedback about the data, and beginning to select an intervention strategy. During the action planning stage, the consultant works with the client to brainstorm options so that special activities are articulated and structures for managing the change process are identified. The consultant at the intervention stage assesses readiness for change and helps develop strategies to overcome resistance to change. At the evaluation stage, the consultant assesses progress of the intervention as well as the overall outcome of the interventions. During the separation stage, the consultant provides feedback to the client on the change process by summarizing progress to date and the decision is made as to whether the client-consultant relationship is still working.

An integrated model (Figure 1), illustrating the role of consultants in gainsharing, has been developed using both the gainsharing model of Hammer (1988) and the action research model of McLean and Sullivan (1989, cited in Rothwell, Sullivan, & McLean, 1995). This model is designed to explain and analyze the roles and the extent of involvement of consultants in the five stages of gainsharing--preparation, design, implementation, evaluation, and separation.

During the preparation stage (Figure 2), consultants examine whether gainsharing is promising or not for a particular firm by engaging in analyses of the external environment and the internal organization. They then help the organization determine whether gainsharing is an acceptable strategy. This could be done through analysis of the organization's culture (Hammerstone, 1987) and an examination of favorable conditions for gainsharing (Lawler, 1981, 1986).

At the design stage (Figure 3), a design committee (Markham et al., 1992) or task force (Masternak & Ross, 1992) is set up to establish the goals for gainsharing, such as increasing productivity, worker attitude, communication, teamwork, and quality. Then, gainsharing plans are designed with a focus on goal, eligibility, bonus formula, definition of performance measures, distribution of gainsharing pool, payout percentage, payout level, and payout period (Lawler, 1981; McAdams & Hawk, 1994; Thomas & Olson, 1988). Employee involvement (Markham et al., 1992), teamwork (Hoerr, 1989; Shaw & Schneier, 1995), education/communication programs (D'Art, 1992; Hammerstone, 1987; Imberman, 1992; O'Dell & McAdams, 1983), and some strategies to overcome resistance to change (Cummings & Worley., 1993) are developed.

Through the entire process of implementation (Figure 4), more employee efforts and better ways of planning and organization of work are expected. A large number of suggestions are expected. Markham et al. (1992) found that more than 400 suggestions were submitted during the first year of the Scanlon Plan. As a result, productivity improvements or cost savings are expected, which eventually lead to bonus payments. In the case of Markham et al. (1992), the average net savings per suggestion was calculated to be $300. If the motivational model of efforts-performance-outcome linkage works well, gainsharing will be supported by all organizational members and eventually will be adopted by the organization as a long-term strategy. Markham et al. (1992) reported that the Scanlon Plan was approved by 83% of the employees initially for a one-year trial period, and then the plan was, to some extent, revised and reapproved by 85% of the employees. The roles of consultants at this stage are to help HR management measure the extent to which employee efforts lead to productivity improvements and to what extent productivity improvements lead to bonus payments, as well as to help teamwork, employee involvement, suggestion systems, and communication mechanisms work well at the operational levels.

At the evaluation stage (Figure 5), collaborative evaluation efforts between consultants and HR management are made to measure the progress of the gainsharing plan, as well as an overall outcome of the gainsharing. The typical time for evaluation is the end of a quarter or a year, although cash bonuses are usually paid out to employees monthly to make gainsharing effects powerful. Productivity improvements or other impacts on firms are measured in terms of qualitative and quantitative measures, and employees are thus compensated through a form of bonus payments. Qualitative measures could be improved employee involvement, employee commitment, communications, morale, customer satisfaction, and retention. Quantitative measures could be increased productivity, profits, cost savings, bonus payments, and product quality. The method of evaluation could be survey, financial analysis, or meetings such as focus groups.

At the separation stage (Figure 6), the consultant needs to ask three major questions: Why separate from involvement in the gainsharing plan? When is the best timing for separation?

How should separation occur? After the consultant has answered "why and when" questions, they face the "how" question. The role of consultants at this stage is to help gainsharing firms manage on their own, without recourse to external consultants. Kim (1996) found a negative relationship between the use of consultants and the survival of gainsharing. This clearly indicates the critical role of consultants at the separation stage to increase the possibility of the survival of gainsharing plans.

Contributions to Human Resource Development

The research to be conducted based on this model will identify the role of consultants in gainsharing plans at each stage of involvement. It will help consultants give appropriate advice and feedback to clients at different stages so that gainsharing plans are designed, implemented, and evaluated successfully. Human resource management and practitioners who may work as, or work closely with, an external or an internal consultant can contribute to organizational process and effectiveness at operational levels by identifying and utilizing a variety of means designed to accomplish these objectives. Gainsharing is often considered to be a part of strategic management by top management, who is ultimately interested in organizational performance, such as returns to stockholders or returns on investment, because gainsharing with consultant involvement is expected to lead to greater organizational effectiveness than when implemented without the use of consultants.

This model is important as it visually presents and describes the roles of consultants in gainsharing plans and opens the door for examining the impact of consultant involvement in gainsharing plans on the organization's processes and effectiveness so that it can contribute to HRD theory and research. Finally, policy makers are interested in obtaining a competitive edge in an intense global market through competitive quality products and services. Thus, gainsharing plans, which are designed to improve product quality, reduce costs, heighten profits, and eventually improve organizational effectiveness, are recommended by policy makers in order to achieve a competitive edge.

Results and Conclusion

Gainsharing plans are used to improve organizational processes and effectiveness, such as cooperation, communication, labor and management relations, quality, cost, productivity and profit, so that they may be used as a survival strategy to respond to external environmental changes. In this paper, a model has been developed to explain and analyze the roles of consultants in gainsharing plans by integrating Hammer's (1988) gainsharing model with an action research model (McLean & Sullivan, 1989, cited in Rothwell, Sullivan, & McLean, 1995). Along with the five stages of gainsharing (preparation, design, implementation, evaluation, and separation) are identified and explained the roles of consultants. This model may provide a theoretical framework to test some empirical questions such as "how does the extent of involvement of consultants in the preparation, design, implementation, evaluation, and separation stages of gainsharing affect organizational processes and effectiveness?"

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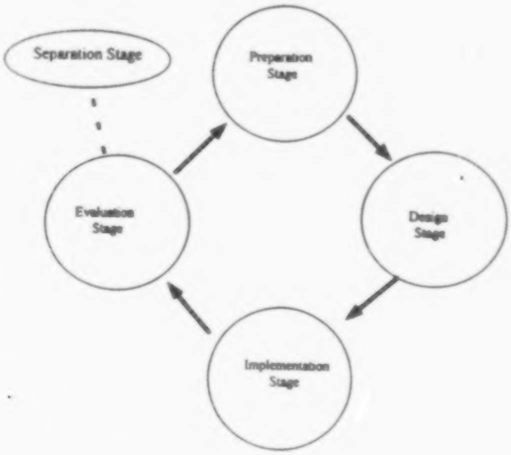
Separation Stage
Preparation Stage
Design Stage
Implementation Stage
Evaluation Stage

Figure 1
Roles of Consultants in Gainsharing Firms

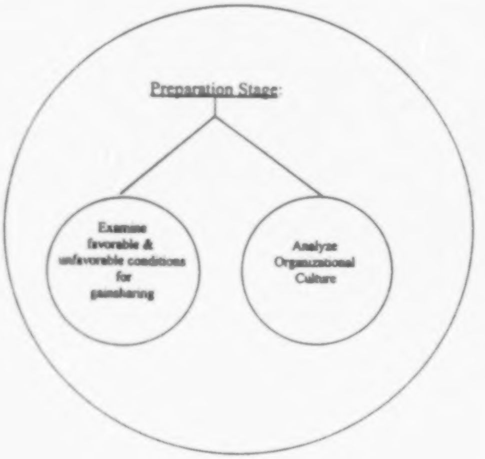
Preparation Stage:
Examine favorable & unfavorable conditions for gainsharing
Analyze Organizational Culture

Figure 2
Roles of Consultants at Preparation Stage in Gainsharing Firms

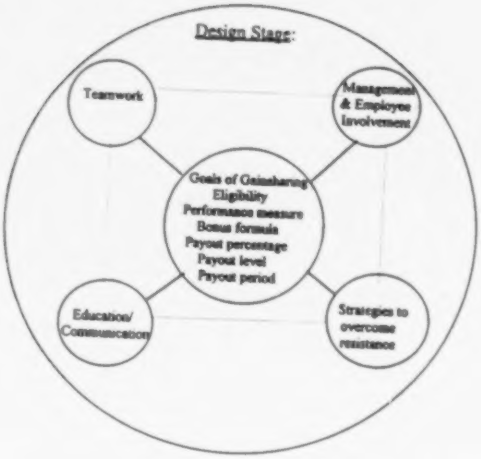
Design Stage:
Teamwork
Management & Employee Involvement
Goals of Gainsharing
Eligibility
Performance measure
Bonus formula
Payout percentage
Payout level
Payout period
Education/ Communication
Strategies to overcome resistance

Figure 3
Roles of Consultants at Design Stage
in Gainsharing Firms

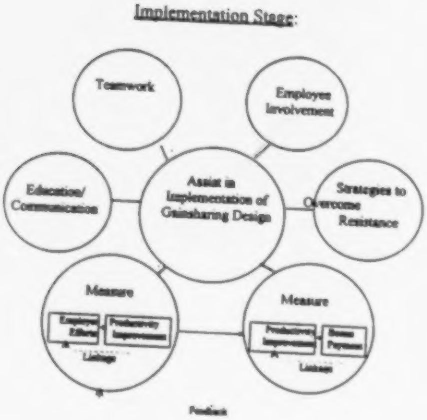
Implementation Stage:
Teamwork
Employee Involvement
Education/ Communication
Assist in Implementation of Gainsharing Design
Strategies to Overcome Resistance
Measure
Employee Efforts
Productivity Improvement
Linkage
Measure
Productivity Improvement
Bonus Payment
Linkage
Feedback

Figure 4
Roles of Consultants at Implementation Stage
in Gainsharing Firms

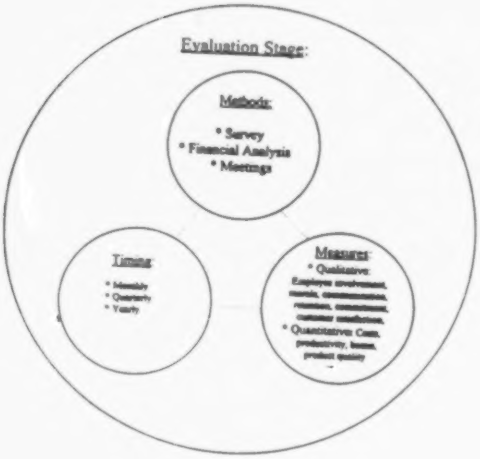
Evaluation Stage:
Methods:
* Survey
* Financial Analysis
* Meetings
Timing:
* Monthly
* Quarterly
* Yearly
Measures:
* Qualitative:
Employee involvement, morale, communication, retention, commitment, customer satisfaction,
* Quantitative: Cost, productivity, losses, product quality

Figure 5
Roles of Consultants at Evaluation Stage

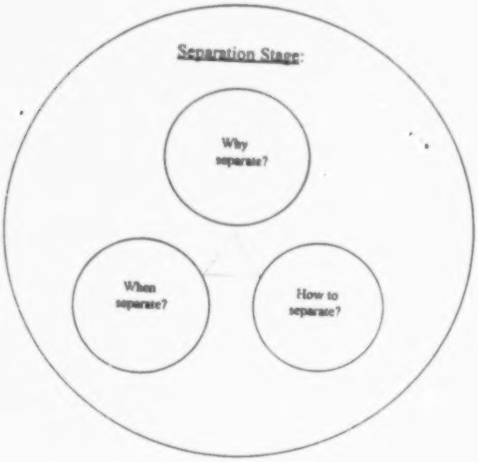
Separation Stage:
Why separate?
When separate?
How to separate?

Figure 6
Roles of Consultants at Separation Stage
in Gainsharing Firms

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Rethinking Boundaryless Organizations: A Framework for the Implementation and Management of Virtual Teams in the Global High-Performance Organization

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The paper presents a model for the implementation and development of virtual teams in a global organization. The dynamic, laterally oriented model was developed through studies of virtual teams in the telecommunications industry. The systems-level model developed encompasses the design of teams, the process of embedding teams in an organization, the development of team and management capabilities and the alignment of organizational context.

Organizations are increasingly facing performance demands and a changing business environment (Lawler, 1996). Consequently, organizations are constantly exploring and implementing new organizational designs that will enable them to change and learn faster and therefore increase the quality and efficiency of their performance. One organization design feature that has been consistently advocated for during the last ten years are teams (Mohrman, Cohen, & Mohrman, 1995).

In the most general sense teams are groups of individuals who work together to produce products or deliver services for which they are held accountable. In practice teams are much more diverse varying on multiple dimensions including mission, structural foundations and duration. A general model of team implementation does not capture the special requirements of different team forms and organizational contexts. The research presented here was particular interested in examining the increasingly popular global organizational context and the design and implementation of their related team structure - virtual teams.

Organizations have traditionally grown through generic expansion or acquisition (Penrose, 1959; Yip, 1982). Recently many Western firms have entered into inter-organizational relationships with international organizations (Contractor & Lorange, 1988) or have expanded globally. Global organizations operate twenty-four hours a day, seven days a week and have operations on at least two continents (Lawler, 1996). Performance demands necessitate that these organizations have their diversely located stakeholders participating on teams These teams are typically called virtual teams. They typically have dispersed stakeholders located in different places and times with little to no face-to-face communication and interactions. Virtual team members often complain of competing tasks, and functional accountabilities. Added to this is the complicated dimension of integrating a multi-cultural work team.

The work on the implementation and management of successful organizational teams advocate principles that are antithetical to the virtual team context including: providing opportunities for on-going face-to-face communication and opportunities for collective training, feedback and recognition (Mohrman, Cohen & Mohrman, 1995). The challenges of managing and implementing virtual teams has largely been unexplored and is the main focus of this research study. To put this research in context we will first review the components of the virtual organization and the existing research around the most enduring aspect of a virtual organization - electronically mediated communication.

Virtual Organizations

Organizations are no longer the visible, concrete distinct places they used to be. In today's society organization has become more of a verb than a noun. That is people are no longer in the same time or place doing business. Organizations are becoming virtual. We can often describe what they do but cannot place them on a map

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(Hesselbein, Goldsmith, & Beckhard, 1997).

There are two major aspects of the virtual organization. Both aspects have to do with the redefinition of boundaries around human/social aspects and physical aspects of the workplace. First the virtual organization is characterized by electronically mediated communication. This is communication where people are physically separated and not face-to-face. Communication is therefore mediated through technology (Kiesler, Siegel, & McGuire, 1984). It is also characterized by the workplace being a place not a concept. The workplace becomes a system of loosely coupled settings such as the airport, car home, satellite office, hotel and restaurant (Becker & Steele, 1995; Handy, 1995).

The building blocks of these virtual organizations are virtual teams. A virtual team is *more than two people who come together for a period of time to work toward a common goal or to produce a product. Team members may not be co-located and often, are separated by time, distance, and culture. Team members may not have worked together before and could come form diverse functional backgrounds and have different reporting relationships.*

Anecdotal evidence has shown that successful virtual team help to build organizational and team agility, develop flexible employees with multiple skill sets, ensure proper utilization of resources and manage projects that meet cost, schedule and technical requirements. Virtual teams use computer-mediated communication (CMC) technologies which include electronic mail, group decision support systems and computer conferences. Interest in this areas has continually grown from attention on technology as it relates to organizational efficiency and effectiveness to the social psychological aspects of computer-mediated communication (Rudy, 1995). A majority of the research in this area has concentrated on the communication technologies.

The limited literature on virtual teams has all recognized that proper technology is needed to ensure the successful implementation and management of these virtual teams. The research has yet to examine additional factors (i.e., organizational, individual or team) that ensure the successful implementation and management of these virtual teams. Considering that many organizations are transferring from a culture of co-located team members, to a virtual team assignment insight into this process is necessary. This research attempts to fill this gap by exploring the organizational factors that contribute to the successful implementation and management of virtual teams.

Research Questions

The research project dual goal was:

> *To examine what organizational factors inhibit and/or facilitate the move to a global virtual team design.*
>
> *To examine the necessary competencies of team leaders and members for a successful organizational implementation of a global virtual team design.*

The study was guided by the work on team-based organization (Mohrman, Cohen & Mohrman, 1995) and socio-technical theory (Pasmore, 1988). The model was grounded in the work of group effectiveness (Hackman, 1987) and employee involvement (Lawler, 1992). In this study organizations were viewed as information processing and learning entities (Galbraith, 1973; Galbraith, 1993; Dechant, Marsick & Kasl, 1993).

Methodology

Research Design. Qualitative research methods were selected to generate data rich in detail and embedded in context. Within the broad area of qualitative research a comparative case study approach was chosen using three cases. This design allowed for within and between case analysis. The three teams chosen for case studies were selected because they were the first and only virtual teams within this organization. As virtual teams these three teams had members that were separated by time, distance and country and were responsible for the completion of an information systems' project.

Our site was a North American telecommunications fortune 100 company. This company employees 82, 000 employees in 60 countries worldwide. Employees located in the headquarters represent 25 different nationalities. Seventy-five percent of the top management has worked in two or more countries. This company was actively working to create a fully networked responsive global organization. As previously stated, the three project teams used to launch their virtual global team strategy were each chosen as a case study for this research project.

Data collection and analysis. In-depth interviews and observations were the primary sources of data collection. First, in-depth interviews were conducted with 11 team members, 3 team leaders, 73 project managers[1] and 11 senior managers. Each case study included gathering information from each team member (project managers and senior managers), team leader (n=18-20 for each team) and managers that had significant interaction with the team (n=20-25 for each team). Significant interaction designated by the team leaders was constituted by bi-monthly interactions with any team members around the work or process of the team. Focused interviews , in that they were organized around several predetermined questions and topics but provided some flexibility in the sequencing of the questions and had no predetermined set of response categories or specific data to obtain. Our sample was chosen to include members of the project teams and outside constituents, thereby allowing us to see the implementation process from multiple perspectives. The interview covered the following topics as they relate to virtual global teams: management processes and structures that foster and/or hinder performance, organizational members' competencies and experiences needed for success, potential impact on clients, and perceptions of management expectations about virtual teams (i.e., What is your experience with virtual teams? and What are the knowledge, skills and experiences needed for success for a member of a virtual team?).

Additional data was collected through several days of observation of team meetings. These virtual teams rarely met face-to-face. Observations were conducted of these rare face-to-face meetings including the launch and three periodic staff meetings.

Prior to conducting the case studies a benchmarking study of best practices for virtual teams were conducted. We looked at managerial and organizational practices that allowed the teams to be successful. This information was used to examine the validity of the information and themes developed in the three case studies. Information was gathered from companies known for successful global virtual team programs including: Anderson consulting, Price Waterhouse, Lucent, Bell Atlantic, Johnson & Johnson and Whirlpool. Figure 1 presents organizational mechanisms that aid the implementation and management of virtual teams. Human resource professionals responsible for the implementation of the global teams were identified for each organization. These professionals were interviewed over the phone using an open-ended protocol. The interviewees were asked to identify best practices associated with their successful implementation of virtual teams. The interviews were recorded by pen and paper. Best practice themes were generated by using simple frequencies. The most frequently identified themes are presented in Figure 1.

Figure 1. Organizational Mechanisms for Implementing and Managing Virtual Teams

Organizational Mechanisms	**Example**
Sustaining and Disbanding Processes	*Standard team kick-off process*
Common Processes	*Define technical and business processes and practices so that everyone on team is clear about roles and responsibilities*
Standards for timing, development documentation, etc.	*Standard project documentation processes*
Support for team-leaders	*Training for team leaders on team processes*
Developing a culture that supports remote work	*Organizational Structure is project based*
Electronic collaboration tools	*Using electronic means for project status and collaboration; e.g. Lotus Notes*
Diverse team stakeholders	*Customers as part of the team*

Data from the observations and interviews were analyzed using Glaser and Strauss' (1967) constant comparative method. Themes were then generated for the three cases followed by an examination and analysis of the themes found across the cases (Miles & Huberman, 1994). To review, the benchmark data was used as a backdrop on which to examine, critically analyze and modify our findings.

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[1] A high number of project managers were interviewed because they are the primary developer and manager of these new team structures.

The interviews were taped and transcribed. Within case analysis were conducted in which the notes from the observations and interview transcripts were analyzed for descriptive and pattern codes using open coding to to generate broader conceptual frameworks and themes. The process went beyond the summary approach and expanded on the descriptive codes examining for analytic potential.

Themes examining the differences and similarities of the cases were generated. Each time a theme of difference or similarity was identified the information generated from the benchmarking study was used to critique these findings. The benchmarking data was used to question the veracity of the findings and explicate the differences.

Results

The results indicate that the successful implementation of virtual teams necessitates three major organizational actions:

- the development of skills and knowledge (i.e., interpersonal, communication and flexibility skills) for members, leaders and other organizational members associated with the virtual teams;
- the provision of tools that support collaborating, communicating, statusing and learning; and
- the development of an organizational culture and management attitude that support the move to virtual teams and globalization as a preferred way of doing business.

Each of these areas will be given an in-depth examination.

Skills and Knowledge. A large set of individual skills and knowledge were cited as necessary for the development and management of virtual teams. Five discrete roles were identified that are a part of and/or affect virtual teams. These five roles were:

- Project leader: responsible for the output of the virtual project.
- Team member: constituent of the teams responsible for assisting with the main task.
- Resource manager: responsible for assignment of personnel to virtual teams.
- Client manager: navigates the process between the client and the team.
- Senior project manager: manages the work of several virtual teams.

For each of these roles different competencies were cited as a development imperative. Categorically the issues of interpersonal skills, flexibility and ability to deal with ambiguity were seen as extremely important areas for development. Figure 2 reports that skills and knowledge associated with each role on a virtual team.

Figure 2. Skills and Knowledge for Virtual Teams

Project Manager	Team Member	Resource Manager	Client Manager	Senior Project Manager
•Building trust within teams •Tolerance for ambiguity and problem solving •Communication planning and execution •Ability to use different media to share information, problem solve, etc. •Meeting management skills •Interpersonal skills to keep individuals connected •Listening, esp. On phone •Transitioning and orienting team members throughout the project •Understanding individual differences •Developing strategies to ensure participation	•Team dynamics and performance, esp. as influenced by individual differences •Good oral and written communication skills •Project management including planning their part of the project, project status and documentation •Ability to resolve issues such as competing priorities •Flexibility to deal with ambiguity •Initiative	•Listening •Sensitivity to cultural and personal backgrounds •Advocacy skills for assignments •Interpersonal concern •Personnel management •Smoothing the transition back into the resource pool after a long assignment •Managing competing needs of members	•Identifying the skill requirements of virtual teams •Systems requirement identification and verification	•Encouraging the reporting of team problems with project managers •Maintaining the integrity of the resource allocation process •Facilitating learning and knowledge sharing between the individuals below them and project teams

Tools. Four major areas of tools that have a special meaning for virtual teams as opposed to tools that could be equally pertinent to co-located teams (e.g., a cost tracking system) were cited as necessary for virtual team success: collaborating, communicating, statusing and learning.

Collaboration. Tools that assist with collaboration and joint effort such as groupware (i.e., lotus notes) were seen as imperative for the continued management and facilitation of virtual teams.

Communication. Tools that assist with electronic communication were seen as necessary on a daily basis. This included e-mail and telephone and teleconferencing. The telephone was seen as the most reliable communication tool. E-mail is often ignored because of consistent use for low importance items. Teleconferencing usefulness was also limited by bandwidth.

Statusing. Tools that assist with communicating the status of projects to all team members and stakeholders are seen as essential in a virtual environment. In co-located teams in traditional environments members can easily ascertain the status of their project from informal observations of the activities of other teams members and hard copy documentation.

Learning. Virtual teams are consistently dealing with ambiguity and the increasing demands of the workplace. To continue development systems are needed that promote learning. Such systems might include a knowledge capturing system or some other means to capture, organize and retrieve lessons learned.

Management Environment. The environment for virtual teams was addressed in terms of management attitudes, practices and policies as well as organizational culture characteristics. Some of these were seen as facilitators and others as barriers. The cultures that sees virtual teams as a preferred way of doing business and supports their philosophy with continuous improvement programs were the environments that were most conducive to virtual team development. Figure three contains a listing of environmental facilitators and barriers to the development of virtual teams.

Figure 3. Environmental Facilitators and Barriers to Virtual Teams

	Organizational culture	**Management attitudes**
Facilitators	•Changing business environment necessitates move to virtual teams. •Individual committed to client satisfaction •Individuals value learning and growth •Willingness to work to put in place processes that promote performance •Action and problem solving orientation •High standards for performance	•Openness to multiple communication media and questions variety of issues •Supporting the move to virtual teams and globalization as a preferred way of doing business •Openness to spending time and money on development activities such as training, mentoring, and job aids.
Barriers	•Lack of visible control for project management •Relationship oriented culture based on face to face and almost daily contact with the individuals around them •Focus on sites local •Not discussing diversity •Not valuing documenting and sharing information	•Need to see someone to think they are really working •Alignment of goals at different organizational levels •Lack of willingness or ability to discuss diversity •Not being clear about team outcomes •Lack of strong sponsorship role for some teams •Inability to give up control for decision making and for items(i.e., budget for travel)

In the next section we will examine implications for virtual organizations and their teams.

Implementation and Development Model

This section describes a model for virtual team implementation, development and management on the individual, team and organizational level. The model is made up of intervention recommendations.

Individuals. Intervention recommendations are included for several types of individuals related to a virtual team: team members, project managers, senior project managers and resource managers. Recommendations are of three types: checklists, guides and forms, training; and mentoring.

Checklist, Guides and Forms. Team leaders and members need to have aides available to quickly get their teams to high performance. These aids would reinforce formal training initiatives making learning more concrete. These checklists forms and guides can assist with project definition and start-up (i.e., project chartering, definition of tasks and deliverables, team member role and accountability, scheduling, building trust) and leading the team (i.e., statusing, making corrective technical changes, motivation, communicating and collaborating) and team dynamics (i.e., level of team member participation, learning, maintaining trust).

Training. The continuous updating of employee skills and knowledge is needed to maintain a resilient workforce. Moving to a virtual team environment is producing changes that should reverberate throughout a skills development and training program. Training in skills and knowledges identified in Figure 2 are critical to successful virtual team functioning.

Mentoring. A mentoring system is recommended for team members and project managers especially junior colleagues. Virtual teams increase the need for mentors because they make learning from colleagues more difficult to obtain. Much research has shown that having mentors results in higher rate of job satisfaction, mobility, opportunity, promotion and compensation for those mentors.

Teams. For the development of virtual teams we recommend two interventions on the team level: the addition of communication, collaboration, statusing and learning tools and the implementation of group facilitators.

Tools. Several types of tools could help the performance of virtual teams. Recommendations for four different types are described in the following section.

- •Communication. Internet collaborative tools to conduct electronic meetings (i.e., Microsoft Netmeeting, Internet Conference Professional Collaborator System 1000, CoolTalk).
- •Collaborating. Groupware to perform technical work together (i.e., Lotus Notes, Netscape's SuiteSpot and Novel's GroupWise 5).
- •Statusing. Tools to bi-directionally communicate the status of projects (i.e., project planning tools).
- •Learning. Tools that assist with the learning within and between virtual teams (i.e. general bulletin boards).

Facilitators. Facilitators may be very useful to virtual teams. There are many situations which the complexity of the project warrants a facilitator. As new research on teams has confirmed, performance and communication seem to change and be influenced mostly during the early stages of a teams' history. Hence, the use of facilitators is recommended to be used early on in a project's life cycle.

Organization. A integrated program to ensure virtual team effectiveness is recommended that demonstrates that management is committed to doing what is necessary to make virtual teams effect. This could include:

- • An ongoing communication effort to inform organizational members about the definition of and challenges associated with the virtual team environment and organizational actions such as the development of new processes. In addition this could include awareness sessions of the special requirements and practices of virtual teams and the process for resolving conflicts and issues among team members.
- •Alignment of goals of each management level. Problems areas such as clarity of decision making authority at different levels, sharing information between levels, clear and consistent direction to project teams, project team outcomes and other areas should be examined one at a time and aligned for each level of management in each directorate and across each project. Developing alignment and shared understanding could become part of a project kick-off and chartering activity for every project or part of regular strategic planning sessions for issues applicable across management levels.
- • Implementing a tracking system to examine the level of trust and satisfaction in the organization. This could include tailoring employee satisfaction questionnaires.
- • Developing standard organizational processes that would assist team members and leaders with all phases of team activities. Standards would facilitate the learning process and generally hasten familiarity with this unpracticed type of teaming.

Conclusion

The field-tested design framework presented in this research aids in the understanding and development of structures and systems to support the strategic deployment of virtual teams. This model's aim is to enhance current skills and abilities and put in place systems that facilitate the ongoing creation and sharing of new knowledge and best practices.We advocate redirecting human resource development practices that will assist collectives and individuals in understanding these new organizational creations.

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Netagogically Speaking, Is IBT Making the Grade? An Exploration into the Degree Selected Internet Tutorials Measured Up To Four Design Criteria

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This exploratory study examined the degree to which 78 easily accessible internet-based-tutorials measured up to selected computer interface and instructional design criteria. Information-based tutorials were compared to skill-based tutorials with respect to their ease of use and opportunity for participants to direct their own learning, interact with instructional materials, and experience a variety of instructional strategies. The findings have implications for the creation, use, and evaluation of internet-based-tutorials.

This research focused on the degree to which internet-based-training (IBT) tutorials met selected design criteria. By combining computer-based education (CBT), hypermedia, and the technologies of the Internet, it is now possible for trainers and educators to deliver instruction anywhere in the world (Caudron, 1996; Hackette, 1994; Stevens, 1996, Wulf, 96). Such internet-based-training can range from short tutorials to full-length college courses. Companies like AT&T, Glaxo, Levi Strauss, Microsoft, Silicon Graphics, and 3M are making use of intranets (company-wide internets) to deliver a wide range of training courses (Cortese, 1996; McKay, 1996).

There are many IBT offerings available. The World Lecture Hall's web site at http://www.utexas.edu/world/lecture/ displays a large list of educational offerings available over the Internet. The site contains hundreds of links to web pages containing course syllabi, assignments, lecture notes, exams, class calendars, slide shows, and multimedia textbooks. The Web-Based-Training Information Center's web site at http://www.clark.net/pub/nractive/wbt.html and the World Internet Training Registry's web site at http://granite.sentex.net/~witr/ also contain extensive lists of educational programs available over the Internet.

A number of researchers have investigated computer-based instruction. In 1996 Interactive Educational Systems Design, Inc. conducted a meta analysis of 176 educational technology research studies undertaken from 1990 through 1995. They found that educational technology had demonstrated a significant positive effect on learner achievement, self-concept, attitudes about learning, and interactions with teachers. Researchers found IBT's level of effectiveness to be influenced by student population, software design, teacher's role, how students were grouped, and level of student access to the technology. A similar review of instructional technologies studies in the military concluded; (1)IBT can be used to accomplish a wide range of instructional objectives across a variety of settings, (2)IBT is often more effective than traditional training, and (3)IBT is often less costly than other forms of training (Fletcher, 1995).

Due to its brief history, few studies have been conducted on IBT. The few studies that exist are primarily descriptive or anecdotal. For example, the computer magazine Byte (1995) has described a "virtual college" under construction at New York University's School of Continuing Education. Hesser (1995) elaborated on Nova University's use of the Internet in doctoral programs. Pask and Snow (1995) outlined some of the problems encountered while integrating the Internet at two universities. Dereshiwsky (1995) addressed some of the benefits of a graduate course being delivered on-line. A study by Lyons (1885) reported on a group of professionals who preferred learning from internet-based courses as opposed to traditional classroom instruction. Tissue et al. (1996) concluded from his research that IBT was effective in the teaching of chemistry concepts but not effective in the teaching of laboratory skills. Denton and Manus (1995) found that student performance increased in selected public schools where teachers received technology training over

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the Internet.

A continuing area of concern about IBT has been the quality of programs that are currently being offered or might be delivered in the future (Clolek, 1994; Nichols, 1995: Tillman, 1996). A number of writers have begun to suggest criteria for evaluating IBT (Clolek, 1994; Nichols, 1995: Nielsen, 1996; Reeves and Harmon, 1993; Tillman, 1996). Criteria being offered pertain to the user interface (ways a learner is able to interact with the computer) as well as pedagogical practices (how the instruction is presented to the learner). Examples of interface criteria include ease of use, navigation, screen design, media integration, and overall functionality. Pedagogical dimensions include but are not limited to underlying instructional philosophy/theory, goal orientation, flexibility, motivation, learner control, and user activity.

Research Questions

For the purpose of this investigation, three research questions were posed. They include:

1. Is there a significant difference in the number of information-based versus skills-based tutorials easily accessible on the Internet?
2. To what degree do IBT tutorials; (a)make use of easy to use interfaces and (b)provide participants opportunity to direct their own learning, interact with instructional materials, and experience a variety of instructional strategies?
3. Are there significant differences in information-based versus skills-based tutorials with respect to ease of use and opportunity for participants to direct their own learning, interact with instructional materials, and experience a variety of instructional strategies?

Methodology:

Several of the widely used Internet search engines (i.e., AltaVista, Excitie, Infoseek, Lycos, Magellan, Yahoo!) were used to locate easily accessible IBT tutorials on the Internet. "Easily accessible tutorials" were operationally defined as "tutorials which can be located using the standard search engines or are listed in the numerous internet guides and directories created by search engine companies, do not require any special software to view them, and require no fee for their use. The tutorials were observed by three observers with varying levels of Internet experience (i.e., very little, substantial, and extensive experience). All tutorials were viewed on high-end Power Macintosh computers. Observations were made via direct and PP connections to the Internet. Three separate observations were made in terms of the following dimensions: ease of use, opportunity for self-directed learning, provisions for interacting with the learning material, and the variety of instructional strategies employed to teach the content. Implicit in the criteria was a Netagogical model (i.e., a set of guidelines for designing IBT) that called for (1) an easy to use interface and (2)a learning situation where learners can be self-directing, highly interactive with the instructional materials, and experience a variety of instructional strategies.

Observation check sheets was completed for each tutorial. Items on the sheets were extracted from the literature pertaining to the user-friendliness of computer interfaces, self-direct learning, and instructional design (Hannond, 1991; Piskurich, 1993; Reeves and Harmon, 1993). Observations were made and recorded with respect to 12 interface items, 7 self-directing items, 1 interactive item, 1 instructional model item, and 10 instructional strategy items. Tutorials that mainly provided general information on a given topic were classified as "information-based," whereas, tutorials providing detailed step-by-step instructions on how to perform specific tasks were classified as "skills-based."

Data from the observations sheets were checked for consistency. Whenever inconsistencies occurred among the three observers, the most experienced Internet observer revisited the tutorial and recorded his best judgment. Data from the observations were keyed into a statistical database from which descriptive and comparative statistics were computed. Descriptive statistics included; frequency counts, percentages, and means scores for the various variables. Comparative statistics included performing a series of *Chi square tests* to test for significant differences between information-based and skill-based tutorials with respect to numbers, user interfaces, self-directing features, interactivity, and use of selected instructional strategies. A *t test* was used to test for differences in the variety of instructional strategies between the two types of tutorials. The probability level for determining statistical significance was $p = .05$

Results

The aforementioned Internet search procedures resulted in the collection of 78 web-based tutorials. Providers of the tutorials included educational institutions (39.744%), corporations (33.333%), professional organizations (6.41%), government agencies (2.564%), and individuals (17.949%). The content for a majority of the tutorials' pertained to the Internet and web publishing (71.794%). The remaining tutorials provided instruction on computer software (10.256%), computer technology (6.41%), safety training (6.41%), foreign languages (2.564%), and miscellaneous topics (2.564%). Forty-eight (61.538%) of the tutorials were information-based (i.e., provided general how-to information). Thirty (38.462%) were skilled-based (i.e., gave specific step-by-step directions on how to complete specific tasks).

A one group *Chi-Square test* performed to answer question number one (Is there a significant difference in the number of information-based versus skills-based tutorials easily accessible on the Internet?) produced a *Chi-Square* score of 62.5 with $df = 77$ and $p = .884$. No significant difference in the numbers of the two types of tutorials was discerned.

Frequency tables created to answer question number two (To what degree do IBT tutorials; (a)make use of easy to use interfaces and (b)provide participants opportunity to direct their own learning, interact with instructional materials, and experience a variety of instructional strategies?) are shown in Tables One through Four. Table 1 shows that 4 of the 12 (33%) interface features were employed by 61 of the 78 (78.295%) tutorials. They included an attempt to be accommodating to both Mac and Windows platform users (96%), a means of contacting the provider (88.462%), easy to understand instructions (85.897%), and easily accessible (78.205%).

Table 1. Number of Tutorials Using Selected Interface Features N=78

Interface Feature	Number Providing	Percent Providing
Accommodating to both Windows & Mac platforms	75	96.153%
Contextual help available	23	29.487%
Download buttons provided for needed software	27	34.615%
Easy accessible	61	78.205%
Easy to understand instructions	67	85.897%
Forward/backward buttons	35	44.872%
General help page	11	14.103%
Means of contacting provider given	69	88.462%
Memory saver or non-graphical version provided	2	2.564%
Search engine for tutorial	8	10.256%
Tutorial site map	4	5.128%
Tutorial menu on each page	10	12.821%

Tables Two, Three and Four provide information on the instructional design features of the tutorials. Table 2 shows that 74 of the 78 (94.872%) tutorials accommodated all 7 (100%) of self-directing features observed. Table 3 reveals that 59 of the 78 (75.641%) tutorials contained from 1-20 links per web page. Table 4 displays data on the 10 instructional strategies used in the tutorials. Sixty-three (80.769%) of the tutorials made use of three strategies. The most commonly used strategies included introductions to the tutorials' content (80.760%), written explanations/directions (100%), and demonstrations or examples (87.179%). The least frequently used strategies included games (1.282%), projects (7.692%), feedback to learners (8.974%), quizzes (8.974%), and post-tests (11.538%).

Table 2. Number of Tutorials Using Self-Directing Features
N=78

Feature	Number Providing	Percent Providing
No prerequisites to participate in the instruction	76	97.436%
Can begin the instruction at any point in the material	74	94.872%
Can go as fast or as slow as one likes	78	100.00%
Can repeat any portion of the instruction at will	78	100.00%
Can discontinue the instruction at any point	78	100.00%
Can select the days of the week in which to learn	78	100.00%
Can select the time of day in which to learn	78	100.00%

Table 3. Average Number of Hyper Links Per Web Page
N=78

Average # clickable Items Per Page	Number Providing	Percent Providing
1-20	59	75.641
21-40	10	12.821
41-60	4	5.128
61-80	3	3.846
81+	2	2.564

Table 4. Number of Tutorials Using Selected Instructional Strategies
N=78

Instructional Strategy	Number Providing	Percent Providing
Introductions to topic	63	80.769%
Written explanations/directions	78	100.%
Demonstrations and/or examples	68	87.179%
Practice exercises	15	19.231%
Projects	6	7.692%
Game or simulation activities	1	1.282%
Quizzes or periodic tests	7	8.974%
Feedback to learners	7	8.974%
Post tests	9	11.538%
End of tutorial summaries	14	17.949%

Chi Square tests performed to answer question three (Are there significant differences between information-based versus skills-based tutorials with respect to the user-friendliness of their interfaces, opportunity provided for participants to direct their own learning and interact with instructional materials?) revealed one significant difference. Contextual help was available in a significantly greater number of information-based tutorials (*Chi Square* = 8.136, df = 1, p = .0043). The *Chi Square tests* performed to answer question three (Are there significant differences between information-based versus skills-based tutorials with respect to the use of selected instructional strategies?) revealed one significant difference. Information-based tutorials made significantly greater use of "introductions to the tutorials' content" than did skilled-based tutorials (*Chi Square* = 4.521, df = 1, p = .0335). The *t test* used to answer the question (Are there significant differences in information-based versus skills-based tutorials with respect the variety of instructional strategies used?) revealed no significant differences. The mean number of strategies used in information-based tutorials was 3.347 and the mean for skilled-based tutorials was 3.586.

Conclusions

Some general conclusions can be drawn regarding the providers, content, and instructional format of readily accessible internet-based tutorials. A majority of the tutorials appear to be provided by educational institutions and private companies. Their major content relates to the Internet and/or web publishing. Tutorials provided by educational institutions tend to focus on understanding the Internet and web publishing. Many of the tutorials provided by private companies teach participants how to use their product (e.g., software) or service (e.g., Internet client provider service). There appears to be a similar number of skill-based versus information-based tutorials available. Furthermore, the computer interfaces and instructional designs of the two types of tutorials appear to be similar.

The information-based tutorials differed with skilled-based tutorials in two respects. Information-based tutorials tended to provide contextual help more frequently and made greater use of introductions to their content. These differences may be due to the size and complexity of the information-based tutorials. Compared to the skill-based tutorials, the information-based tutorials often contained more information spread over a greater number of web pages. Introductory information was needed to understand the scope and organization of the information. The information-based tutorials also included more download pages thus creating a need for more contextual help.

The interfaces of the tutorials appear manageable for learners with web browser navigation experience. The lack of navigation buttons, tutorial menus, and site maps makes it easy for novice Internet users to get lost in the material. Most tutorials properly load on the first attempt without any appreciable time delays (i.e., take less than one minute to load). The help features (general and contextual) seem underdeveloped or are nonexistent. Most tutorials do not provide a non-graphical version of their tutorials. To fully benefit from the tutorials, users must use a computer and a browser capable of handling graphics, including animated GIF images.

As might be expected with various forms of computer-based or computer-aided instruction, the web-based tutorials are generally accommodating to self-directed learning. Learners can choose what, when, and how rapidly they will learn. However, learners are limited in the means (i.e., the instructional/learning strategies) by which they may learn new concepts. The tutorials make wide use of such strategies as descriptive narrative and examples. They make surprising little use of practice exercises and learner projects.

Discussion

When considering the global question posed in the title of this paper (i.e., "Netagogically speaking, is IBT making the grade?") it is easy to arrive at different answers. How highly one grades or rates the instructional design of the tutorials depends in some measure upon; (1)the nature of the criteria being used, (2)the quantitative standards being applied and (3)the type of tutorials being judged. For example, if one considers all 12 interface features listed in Table 1 as equally important criteria for judging the quality of both information-based and skilled-based tutorials, one might give the tutorials a failing grade. Because only 4 of the 12 (33%) interface features were employed by 61 of the 78 (78.295%) tutorials, it can be argued that the tutorials do not have very user-friendly interfaces. However, if one considers such features as download buttons, general help pages, tutorial search engines, tutorial site maps, and tutorial menus on all web pages as inappropriate criteria for evaluating information-based tutorials, one might conclude that information-based tutorials come somewhat closer to making the grade. Thirty-four out of these 48 tutorials (70.833%) incorporated 5 out of 7 (71.428%) of the remaining interface features.

Hyper links (i.e., text or graphic objects that when clicked transport the learner to new information) are common to all web pages. In addition to providing users a means of navigating a web site, they also give participants a means of interacting with the learning materials as they see fit. The number of hyper links per web page can serve as crude measure of the interactivity of a tutorial. A small number of links (e.g., 3-10) afford learners few opportunities to interact with the learning materials. The learner is more passive and has less opportunity to accommodate her/his own learning style. However, a very large number of links (e.g., 60 or more per page) might be overwhelming, confusing, or distracting to learners. Seventy-five percent of the observed tutorials contained 1-20 hyper links per web page. Although there are no hard and fast rules as to the appropriate number of hyper links that should appear on a page, 1-20 seemed to keep observers actively engaged in the tutorials without being distracting or overwhelming. If 1-20 links is considered an appropriate number of links to appear on tutorial pages, then the observed tutorials might be close to making the grade with respect to their interactivity.

A unique capability of IBT is that it can deliver instruction to adult leaders in their own homes or businesses on their own terms. For 94% of the tutorials, there were no prerequisites to participating in the instruction. Learners could begin the instruction at any point in the material, go as fast or as slow as they desired, repeat any portion of the instruction at will, discontinue the instruction at any point, and select the times and days of the week in which to learn. Based on these criteria, it can be concluded that the tutorials are making the grade with respect to accommodating self-directed learning.

Tutorials may also be graded or rated on the variety of instructional strategies included in their instructional designs. It can be argued that because different strategies are more effective at producing certain learning outcomes and because adults have different learning preferences (Piskurich, 1993), a variety of instructional strategies should be included in any instructional design. Since both types of tutorials make wide use of only three instructional strategies, it can be concluded that they are not making the grade with respect providing learners a variety of instructional strategies. The tutorials need to make greater use of practice activities and learner projects, as well as provide learners more feedback.

The findings of this research are not generalizable to all internet-based tutorials. The observed tutorials included only no-fee, easily accessible tutorials. While these tutorials appear to hold promise in terms of their ability to accommodate self-directed learning, they do not generally measure up to the design criteria specified in the researchers' netagogical model. As the use of internet-based tutorials increases, there is a need to clearly define and label that which constitutes a tutorial. For example, should instructional programs which do not provide any practice or drill activities be considered a "tutorial." There is a need to develop and research internet-based tutorial prototypes. For example, what does a netagogically sound tutorial look like and how effective is it at teaching specific skills over the Internet. Finally, educators and human resource developers must be trained in the creation, appropriate use, and evaluation of internet-based tutorials. Based on the observed tutorials, IBT providers are currently in an "experimental" or "learn as you go" stage.

Summary

This exploratory study looked at the degree to which 78 easily accessible internet-based-tutorials measured up to specific interface and instructional design criteria. Differences in information-based and skilled-based tutorials were examined. The tutorials appeared to accommodate self-directed learning and provide an appropriate level of interactivity with the learning materials. The interfaces of the tutorials did not appear to be particularly user-friendly for novice navigators. Relying mainly on descriptive narrative and examples, the tutorials provide learners a limited number of instructional strategies. Few of the tutorials made use of practice activities or learner projects. Compared to skilled-based tutorials, information-based tutorials provided more contextual help features in their interfaces and provided more introductions to their content in their instructional designs. The current tutorials might best be used with experienced Internet users and supplemented with instructor-made practice activities and feedback. There is a need to clearly define what constitutes a tutorial, develop netagogically sound IBT prototypes, and conduct research on the effectiveness of various prototypes to produced selected learning outcomes.

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Reliance on High-Technology: a Counterproductive Professional Role Construct Found in Medical Schools

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We developed a structural equation model to gain a better understanding of the personalities of medical students who perceive hi-tech medicine as the superior form of medical practice. Intolerance to clinical uncertainty, Machiavellianism, and authoritarianism characterized these students. They also tended to have a negative attributional style toward patients with psychological problems and to choose non-primary care medical careers. Students who perceive hi-tech medicine as a panacea in clinical medicine share personal traits, attitudes toward patients, and career choices that do not advance the nation's stated goals for human resource development in medicine.

Contemporary medicine has three persistent problems: medical care costs too much; too many specialists and too few primary care physicians; and, impaired doctor-patient relationships. Blame for these deficiencies is often attributed to doctors' reliance on high-tech medicine. To explore this problem, we developed a scale to measure medical students' beliefs and feelings about high-tech medicine's role in contemporary medical practice.(1) After five years of experience with this measure, we propose that reliance on high-tech medicine is a professional role construct closely related to personality that not only predicts medical students' choice of specialty but also participates in shaping their attitudes toward patients. The work reported here describes a structural equation model that represents the relationship between medical students' scores on the high-tech medicine scale and their personal traits. This model's contribution to new knowledge in human resource development is shown by the answers we obtained to the following questions. Which medical students score highest on reliance on high-tech medicine? What personal and professional role traits characterize them? What effect does a high score on this scale have on their attitudes toward patient problems? How much influence does reliance on high-tech have in predicting seniors' choice of specialty? How well does a high-tech score separate students who choose a primary care residency from those who enter a non-primary care one?

Methods

Senior medical students (n=1907) from six medical schools (public and private) completed a questionnaire that included measures of reliance on high-tech medicine, authoritarianism, intolerance

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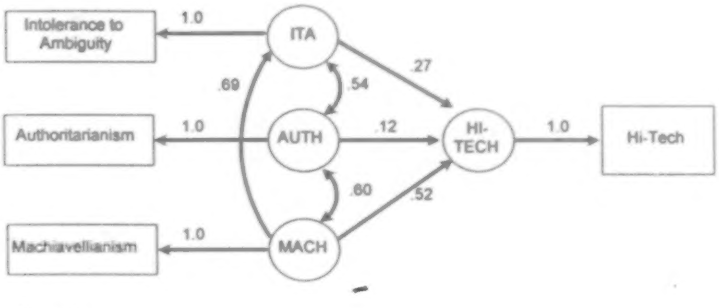
to ambiguity, depression, Machiavellianism, sensitivity to patients' behavior, social desirability/self-monitoring, and thanatophobia.(2) Because this study was designed to determine if reliance on high-tech medicine influenced medical students' attitudes toward patients' problems, a scale measuring negative orientation to psychological problems (NPO) was included as part of the survey.(3) Using a Likert-type scale with scores ranging from 1 to 7, respondents indicated the degree to which they agreed or disagreed with each statement. Total scores were calculated by summing the scores of each item and values were reversed for items with opposing response directions. Senior medical students indicated their specialty choice for residency from 10 specialties using the method of paired comparisons. For statistical analysis, a LISREL 8 regression model was estimated to determine the personality traits that predicted reliance on high-tech scores. Latent variables were used for both the dependent and predictor variables in the model. Students with missing values were excluded from the analysis. Alpha coefficients and standard deviations were used to calculate scale error variances that were then entered into the LISREL model. The model was "just identified, ," i.e., the number of parameters to be estimated was the same as the number of unique elements in the observed covariance matrix. LISREL was also used to test a model that hypothesized that students' reliance on high-tech predicted their attitudes toward patients with psychological problems. Logistic regression was used to estimate the relationship between high-tech scores and seniors' choices of a primary or non-primary care residency.

Results

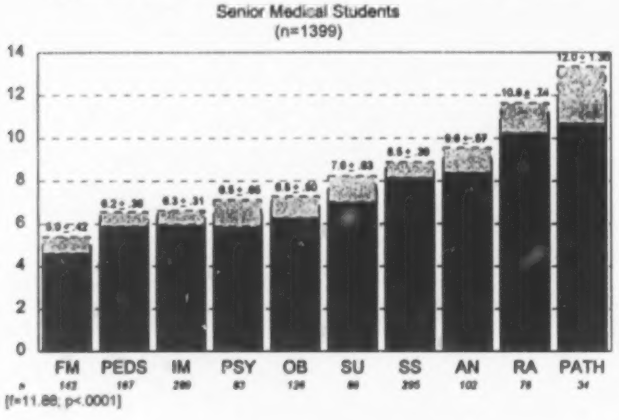
1. Higher scores on reliance on high-tech medicine were predicted by intolerance to clinical uncertainty ($p<.0001$), Machiavellianism ($p<.0001$), and authoritarianism ($p<.0001$) (Figure 1). The structure of these relationships specified by the LISREL model provided a good statistical fit (R=.53).
2. Reliance on high-tech medicine together with its three predictors accounted for 44% of the variance associated with medical students' negative orientation to patients with psychological problems .
3. Scores on reliance on high-tech medicine predicted senior medical students' residency choices (Figure 2). The rank order by high-tech scores was: pathology (highest), radiology, anesthesiology, surgical subspecialties, general surgery, ob-gyn, internal medicine, psychiatry, pediatrics, and family medicine (lowest) [$f=11.88$, $p<.0001$].
4. Of the eight personal and professional role traits included in the survey instrument, reliance on high-tech was the best predictor to separate students choosing a primary care career from those choosing a non-primary care one, (chi square=34.3 $p<.0001$)

Figure 1. LISREL Model:
Predictors of Reliance on High-Tech



$R^2 = .53$

Figure 2: High-Tech Score Increments by Career Choice



Discussion

Previous studies attempting to predict medical students' career choices have been criticized for their weakness in design, inconsistent dependent and independent variables, and the small number of students surveyed.(4) A major objective of this study was to determine how well reliance on high-technology predicted seniors' choice of career. Our results, based on more than 1000 students who chose either a primary or a non-primary care specialty, show that reliance on high-tech medicine is the best measure to identify the student who plans a primary care career rather than a non-primary one.

Medical students who score higher on high-tech medicine, as a group, are less tolerant of uncertainty, more Machiavellian, and more authoritarian than their peers. With the measure we used, being intolerant of uncertainty means that these students dislike caring for patients with doubtful diagnoses, are irritated by inconsistent laboratory reports, and are "turned off" when consultants "are not sure" what is wrong with a patient and when pathologists cannot find the cause of death. It has long been recognized that the person who is intolerant of ambiguity tends to sort choices as either black or white absolutes in order to avoid the reality of grey-zones. High-tech medicine provides numbers which apparently satisfy a need for students who feel uncomfortable caring for patients with ambiguous problems. By contrast, the person who tolerates uncertainty is generally receptive to new ideas, is willing to examine ideas from different perspectives and copes more easily with ambiguous situations.(5)

Machiavellianism also predicted reliance on high-tech medicine. This means that students with higher scores on high-tech tend to value flattering important people, telling people what they want to hear, and acknowledging that it is difficult to get ahead without cutting corners here and there.(6) High-tech medicine's appeal to these students supports the view that "emotional detachment is the underlying requirement to be Machiavellian."(7) Authoritarianism, the third predictor of reliance on high-tech medicine indicates that these students tend to "favor better health care for conscientious and compliant patients and resent tax dollars being spent on caring for patients with self-inflicted problems." Students who favor such differential standards of health care are generally the same ones who favor segregating patients and rationing health care based on their intelligence quotient, lifestyle, or sexual orientation.(8)

Students with a negative orientation toward patients with psychological problems generally scored higher on reliance on high-tech. The marker variables of these two scales illustrate the meaning of this relationship: the student who feels that "the laboratory profile is the most important part of the medical record" is not likely to "look forward to caring for patients with psychological problems." Because most visits to a general medicine clinic are for psychological problems, a negative orientation toward these patients continues to pose a big problem in meeting the nation's needs in primary health care.(9)

Because non-primary care residencies continue to attract large numbers of medical school graduates, meeting the national goal of more primary care physicians and fewer specialists remains a difficult problem. At the beginning of this decade, it was reported that doctors accounted for 80% of health care costs.(10) Much of the blame for the runaway costs of American health care has been attributed to doctors' use of high-tech medicine.(11-12) An example of this was documented recently by a study of management of acute low back pain. It was found that orthopedists ordered CT or MRI scans three times as often as primary care providers but achieved less patient satisfaction than chiropractors who treated a control group of patients.(13)

To summarize, medical students inclined to rely on high-tech medicine believe that "medicine by the numbers" is the best way for them to practice medicine and believe that if they are technically competent, they can forget about the psychosocial aspects of a patient's illness. The validity of this construct is supported by it's demonstrated value in predicting students' choice of career and their attitudes toward patients with psychological problems.

These findings question medical schools' current policies in human resource development. Are existing admissions policies and medical curricula designed to increase the number of primary care physicians? Or, do they still support an education in medicine where the major emphasis is on reliance on high-tech medicine? To identify students who are likely to become future primary care physicians, admission committees should be looking for students who tolerate uncertainty and are non- authoritarian and non-manipulative. By developing a curriculum that de-emphasizes high-tech medicine, medical schools can make careers in primary care more attractive. These proposed changes are suggested as one approach to addressing three major continuing problems of medical care in the United States: too few primary care physicians, an impaired doctor-patient relationship, and excessive costs.

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Distance Training System (DTS): A Conceptual Framework

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This paper proposes a conceptual framework for a Distance Training System (DTS). A DTS is a way of understanding how a variety of organizational inputs should be considered to develop a system of instruction that can efficiently and effectively support individual training outcomes. Given some assumptions and using a systems view, a DTS can be employed by HRD professionals to develop an infrastructure for training that supports the organizational performance of its workforce.

Human Resource Development (HRD) professionals are constantly challenged in today's changing work environment to provide quality training for a diverse, and globally dispersed workforce. In addition, the information age and the high rate of technological change has effected jobs and work processes in many organizations (Chutes, Balthazar, Poston, 1990). At the macro level, changes in technology, employee demographics, and globalization are challenging organizations to find new solutions to help employees receive new knowledge, and to develop the new skills and attitudes required to perform these new jobs. The problems caused by a lack of knowledge, skill, or attitude in this new work environment can seriously impact the organization's overall performance (Rummler and Brache, 1995).

Historically, distance education has provided an efficient solution to instructional problems caused by a separation of teacher and learner by space or time. Distance education allocates limited resources such as teachers, classrooms, and content materials (Wagner, 1990). Although efficient, many researchers in the past have not recognized distance education as an effective learning process. However today, the concept of distance education combined with new communication technologies, offers potentially efficient and effective training solutions to those who facilitate learning in the workplace. The challenge is where to begin.

Distance Education Defined in the Literature

According to Moore (1987), distance education is "any formal approach to learning in which a majority of the instruction occurs while the educator and learner are at a distance from one another." Keegan (1986) indicates that distance education has four defining elements: (1) separation of teacher and learner during the instructional process; (2) influence of an educational organization with evaluation; (3) use of educational media to unite the teacher and student in course content; (4) two-way communication between the teacher and learner. Inherent in the concept of distance education is the planning, organization, and supervision of the system. Also important is the process of designing, developing and delivering the learning experience (Dwyer, 1990). The challenge most cited for a distance education system is that learners are expected to work through designated learning experiences without the immediate and contiguous support of an instructor (Cookson, 1990; Verduin and Clark, 1991). Because the learners are separated from the content and the instructor, they must be highly motivated to gain knowledge and understanding (Garrison, 1988). Likewise, instructional designers need to be concerned with efficiently and effectively providing content based on how the learner perceives, assimilates, interprets, stores and retrieves information (Wagner, 1992).

Moore and Kearsley (1996) from a theoretical and systems perspective, provide the fundamental relationship between the learner, content, and teacher in distance education. In his theory of transactional distance, Moore (1973) defines "distance" as more than just time or

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geographic separation of learners and teachers. He also includes a distance of understandings and perceptions that must be overcome by teachers, learners, and the educational organization, if effective, deliberate, planned learning is to occur. Moore's (1991) focus, coming from an adult education perspective, is on the learning process itself. He suggests that the content of the program (structure), and the amount of discussion (dialogue) required for understanding, should drive the type of distance education system developed, and not the medium or the technology. In his system, the learner is assumed to be autonomous.

Theoretical Application of Distance Education to Training and HRD

Performance is the focus of an organizational system. Likewise, a trainee's learning that leads to performance on the job is the desired outcome of any training system. The role of HRD is to support organizational performance. Training is only one solution utilized by HRD professionals to improve performance. Training is applied when a lack of knowledge, skill or attitudes (KSAs) is determined to be the root cause of a performance problem at the job performer level. For an organization, training is often the tool that is the most expensive solution to implement. Training requires employees to leave their jobs, often travel to another location, and many times participate in a learning activity that may not be immediately applicable to performance on their job.

Communication technologies available to trainers today, can transmit the content of any training program via voice and data, allowing the employee to remain at the job site, thus minimizing travel time. Likewise, employees that are self-directed would be able to receive training and engage in learning based on their individual needs. Second, the dialogue required for understanding can be facilitated between trainer (or subject matter expert directly) through interactive communication technologies. The ability to exchange information can make the training session a more effective learning experience for both the trainer and trainee. But, as Moore (1991) warns, the technology should not drive the type of distance education system developed. The content to be learned and the amount of dialogue needed for understanding should be the deciding factors.

Organizational performance should also drive the decision whether or not training at the job performer level is the appropriate solution. If continuous learning is a strategic organizational goal, then a distance training system may be an appropriate infrastructure to consider to support training in the organization. A distance training system (DTS) has the potential for supporting efficient and effective training performance if certain factors are present, and if it is conceptualized thoughtfully. The rest of this paper provides the reader with a basic overview of a DTS.

Problem Statement

One of the critical challenges that Human Resource Development (HRD) professionals face, and will continue to face in the future, is developing employee expertise (Jacobs and Jones, 1995). In general, employees today are expected to be more autonomous (Candy, 1991), while the nature of work is becomes more complex (Howard, 1995). While the HRD literature offers a performance perspective about the learning process, little research has been done on distance training specifically. In terms of the learning process itself, reviews of literature by Leidner and Jarvenpaa (1993) and Alavi et al. (1995) both concur that learning is best accomplished through active involvement. Interactive communication technology offers this potential.

New knowledge, skills, and attitudes are required for employees to adapt to new jobs and processes in a continuously changing organizational environment. If organizations believe in building a competitive advantage through their people (Pfeffer, 1994), then distance education has the capability of providing an infrastructure to do so. Interactive technology supports individual employees' active, continuous learning in the workplace. By using a systems model applied to performance (Jacobs and Jones, 1995; Swanson, 1994), a distance training system (DTS) can be conceptualized for use by HRD practitioners in an organizational context.

The challenges identified from both the literature and the current workplace reality are:

a.) why develop a distance training system? b.) how to develop a distance training system? A well-planned, integrated distance training system will change the traditional classroom training approach. However, interactive instructional designs can be an overwhelming challenge. This paper is only a starting point. A conceptual model can help simplify this complex topic. The purpose of this paper is to help answer the two questions above by:

1.) Identifying the assumptions under which a DTS should be considered
2.) Defining a DTS and its associated inputs, processes, and outputs
3.) Discussing the implication of a DTS for HRD practitioners and
4.) Identifying questions for further scholarly research

Why Develop a DTS?

Organizational Strategy An organization will only develop and implement a DTS framework to improve its overall organizational performance. Strategically, a DTS will only be an efficient and effective solution if the organization's competitive advantage is directly dependent on its employees' knowledge and skills as a collective resource. Recent research in human resource management and organizational performance (Becker and Gerhart, 1996; Barney, 1995, 1991) suggests that a "resource-based" view of the firm is a strategy that focuses on developing complex systems that support people. A firm will achieve a competitive advantage since these systems are difficult to reproduce by their competitors. Systems that leverage technology to support individual, team and organizational performance will be difficult and costly to duplicate.

A DTS should be viewed as an infrastructure for a training system. An organization that already has a training system in place should analyze, design, develop, implement, and evaluate a DTS through its HRD function. A DTS should be considered as a solution when an organizational performance problem (gap) has been determined to be caused collectively by employees' lack of knowledge, skill, or attitudes related to their jobs. A DTS would be especially effective when an organization continually has new processes, products or services that are being introduced quickly to the market. The solutions offered by a DTS are technical, managerial, or awareness training brought directly to the employee on a just-in-time basis.

Assumptions The organization considering a DTS must have certain characteristics for this tool to be an option for providing employees with new knowledge, skills or attitudes. The four elements that appear to be critical to developing a DTS are:

(1) a large number of employees that will require training (# employees),
(2) the knowledge of a subject matter expert is a significant but limited resource requirement for developing employee expertise (instructional content),
(3) the timeliness of new knowledge, skills or attitudes required is critical to performance on the job (speed to market),
(4) the type of training required (managerial, technical, or awareness) determines the amount discussion required for employee understanding (dialogue)

Strategically, an organization should consider these factors to determine if a distance training system is appropriate.

How to Develop a DTS?

A Systems Approach as a Conceptual Framework for a DTS. A systems approach as defined by Sherman (1981) is "essentially a way of thinking about a problem which is complex and must be brought under control and provides a means for conceptualizing functions and activities in order to keep the managed enterprise moving toward stated goals." (p.24) The systems approach takes a holistic view of the complex transaction. A DTS is based on the view of instruction as a systematic process where each input or component part is important to a successful learning outcome. Jacobs and Jones (1995) with their view of structured on-the-job training as both a system and a process provide the framework for the DTS. Swanson (1994) also developed a systems model of performance improvement that contributed to the DTS development.

A system is defined by Dick and Carey (1990) as a "set of interrelated parts, all of which work together toward a defined goal. The parts of the system depend on each other for input and output, and the entire system uses feedback to determine if its desired goal has been reached."(p.2-3) A DTS is a concept that brings together all the inputs required to construct a frame for an organizational training structure within a performance paradigm.

Definition of a Distance Training System (DTS) A DTS is a framework, or conceptual way HRD professionals can view distance training inputs, process, output, feedback and situational context variables. A DTS is defined in this article as:

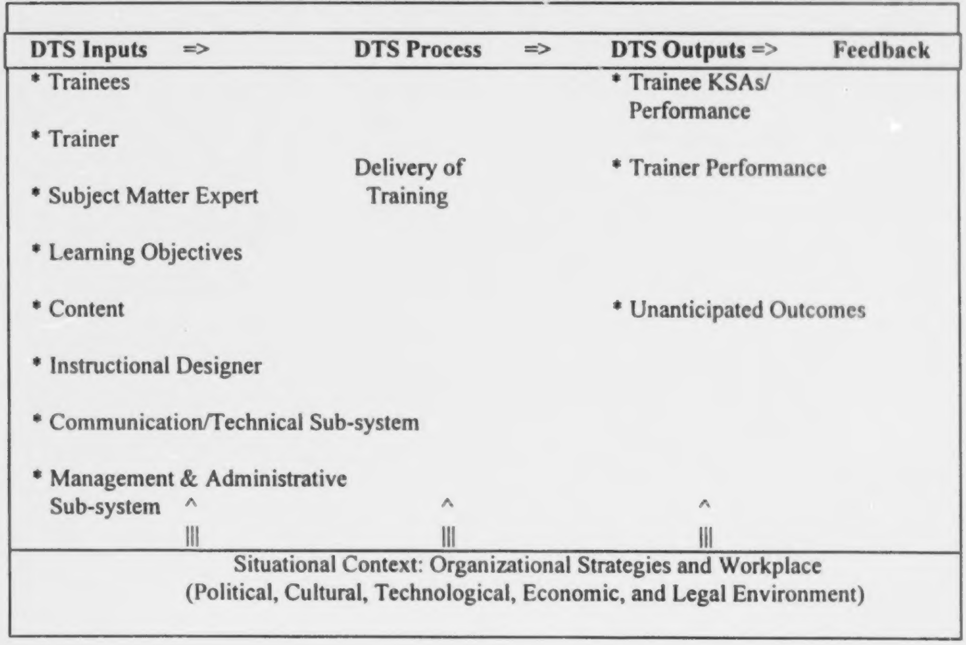
> *a set of interrelated inputs (trainers, trainees, content, learning objectives, subject matter experts, instructional designers, a communications/technical sub-system, and a management/administrative sub-systems) all of which work together in a training delivery process that results in a training outcome that leads to a performance goal. Coordination among the inputs is necessary to achieve planned learning objectives. The entire system uses feedback and situational context variables to determine if performance on the job has been achieved.*

A DTS is similar to "teletraining" except that it is more expansive in its view within an organizational context. Chutes, Balthazar, and Poston (1990) define teletraining as "a complete system that integrates the planning, delivery, and management of training by using a combination of information technology and teleconferencing services."(P.260) Conceptually, a DTS considers these points, plus the political, cultural, economic, technological, and legal environmental variables. A feedback sub-system is also introduced with the DTS model.

An analysis and value of input variables should be calculated as well as the expected value of the outputs, before a DTS investment. An evaluation of the employees' performance on the job, after distance training, must be also be designed into the larger performance system.

Unanticipated outcomes are expected from this system. However, the purpose of the DTS is specifically to provide a system of instruction that results in trainee knowledge, skill, and/or attitudes (KSAs) and trainer performance. Figure 1 outlines the components of the DTS.

Figure 1: Distance Training System (DTS)



DTS Inputs =>	**DTS Process** =>	**DTS Outputs** =>	**Feedback**
* Trainees		* Trainee KSAs/ Performance	
* Trainer			
* Subject Matter Expert	Delivery of Training	* Trainer Performance	
* Learning Objectives			
* Content		* Unanticipated Outcomes	
* Instructional Designer			
* Communication/Technical Sub-system			
* Management & Administrative Sub-system ^ |||	^ |||	^ |||	

Situational Context: Organizational Strategies and Workplace
(Political, Cultural, Technological, Economic, and Legal Environment)

Definition of DTS Inputs, Processes, Outputs, Feedback and Situational Context

Inputs ***Trainee*** A trainee is a person employed by the organization to perform some specific job, usually with direct impact on a product or service that goes to the customer. All trainees are different in terms their level of KSAs, needs, learning styles, levels of motivation, and experiences.

Trainer A trainer is a person with specialized knowledge and skill to plan, design, deliver, and evaluate instruction. Trainers usually possess skills for delivery of training modules.

Subject Matter Expert (SME) A subject matter expert is the organization's staff person, or an outside consultant with specialized knowledge of a product, service or process.

Learning Objectives Learning objectives are the specific goals of the training that lead to some performance on the job. They outline what specific knowledge or skill is required by the employee to perform a task based on job analysis.

Content The content is the actual knowledge or skill being conveyed. The "what" or message that is to be experienced by the trainee.

Instructional Designer An instructional designer is skilled in how to design instruction and match the training content and learning objectives to the appropriate medium.

Communication/Technology Sub-system The communication technology sub-system is the communications software, hardware, and technical expertise required during training to enhance the instruction between the trainer and the trainee. There are two components of a communication sub-system, a "process" or software component, and a "product" or hardware component. Both require technical expertise to operate effectively. The process component is concerned with "how" the training is experienced by the trainees. The product component is the physical equipment that facilitates the type of communication such as a one-way or two-way transmission of voice or data or both.

Note: The dialogue between the trainer and trainee can be enhanced by communication technology. Three (3) generations of two way communications identified by Garrison (1985) are correspondence, teleconferencing, and microprocessor based. Media is viewed as a subset of hardware that distributes the information (referred to as a delivery mode). Along with the traditional print media, Chutes (1991) provides three delivery media used in teletraining: audio, audiographic, and video.

Management and Administration Sub-system The management and administration sub-system include the managerial and administrative support people who are responsible to make sure all the DTS inputs are organized and supported. Management must work with the various inputs to coordinate the development of the DTS. Management is responsible to understand the organization's strategies and the environment in which the organization operates. Management must then coordinate the various inputs and create the DTS. Management (HRD function) determines if a DTS is the appropriate solution that support's the organization's strategies. Likewise, management must set up administrative support for maintaining the ongoing operation of a DTS. The administrative support would schedule trainees, coordinate meetings for course development, and other duties that keep the DTS operational. This includes support for the trainees, trainers, subject matter experts, and the communication sub-system.

Process ***Delivery of Training*** The delivery of the training is the actual transaction between the trainer, trainee, and content (delivery of the training module). Delivery combines all the inputs into a training module transmitted by the trainer. Considerations about the actual job and the amount of dialogue required for understanding by the trainee has already been considered in the planning and design of the training module by an instructional designer. Delivery is the result of how the trainer conveys the training module message to the trainee(s). The trainer can control the delivery of the instruction; however, how the trainee receives new technical, awareness, or managerial training is a function of the learner. How training is delivered should be a function of the DTS inputs that maximize trainer and trainee performance.

Outputs ***Trainee KSAs/Performance*** The trainee's performance is the degree to which the employee can take action or carry out a learning task based on the goals and objectives of the training. The gaining of new knowledge, skill or attitudes (KSAs) is usually measured by some test or assessment instrument after the training event.

Trainer Performance The degree to which the DTS designed training program was delivered by the trainer as evaluated by the trainee's performance. How well the trainer knows the instructional objectives, job content, uses the subject matter expert, conveys the content, matches the appropriate communications technologies to the trainees, etc. will increase or decrease the effectiveness of the training transaction.

Other Unanticipated Outcomes Other by-products of training that are not specifically intended by the DTS, but are potential by-products. For example, a "culture of expertise" (Jacobs and Jones, 1995).

Feedback is collected from a system set up so that management can gain information about individual and collective organizational performance. A feedback system usually allows for direct customer feedback data to be collected and analyzed by management. This feedback can be used to assess trainees gaps in performance on the actual job. For example, performance appraisal data is collected by management and provided to both the trainee and trainer as a source to aid in improving performance.

Situational context is a sub-system composed of the organization's strategies and it's workplace environment. How the organization interacts with the larger macro environment of political, cultural, technological, economic, and legal factors will influence DTS inputs, process, and outcomes. Every organization has a business strategy. Chandler (1962) defines strategy as "the basic long-term goals and objectives of the enterprise which leads to the adoption of courses of action and allocation of resources necessary for carrying out these goals." (p.13) Strategy involves matching organizational skills and resources with constraints and opportunities in the environment. Analysis of the corporate strategy and the skill level of employees must be assessed to determine if the DTS is an appropriate tool to be used to address performance problems.

Implications of a DTS for HRD and Questions for Future Research

A Distance Training System (DTS) provides a way for HRD professionals to understand how the concept of "distance education" can be adapted to training and extended to performance in an organizational setting. This paper provides the assumptions for why a DTS should be considered by an organization. If organizational performance is dependent on its people continuously learning new knowledge and developing new skills and attitudes, then a DTS may be an appropriate and strategic solution. Next, a DTS was outlined to provide a framework for thinking about how the system should be constructed. How a DTS is ultimately operationalized will depend on how the inputs are arranged and implemented by HRD to meet the training needs of employees based on individual gaps in performance based on a lack of knowledge, skill or attitudes.

To conclude, a number of research questions have been generated to serve as a basis for further inquiry and research into the effectiveness of a DTS.

a. What kinds of trainees excel using a distance training system? What motivational, cognitive/learning style, or psychological characteristics differentiate trainee performance using a DTS?

b. What kinds of trainers would perform well in a DTS environment? Are new skills required by those who deliver content in this communicative/technical environment? What are the new skills required by instructional designers to assess and use all the new computer media and communication technologies available?

c. What is the cost-benefit of certain types of communication technologies over traditional methods of training? What is the break-even point when investing in DTS and the expected ROI? How should it be measured?

d. What types of communication technologies are best matched with desired training outcomes? Does the amount of dialogue limit understanding? How does the amount of dialogue effect individual trainee performance or overall organizational performance? Does a DTS alter the training content? How will trainees react to the technologies that require self-direction and motivate employees to learn?

e. How does the organizational strategy or situational characteristics support a DTS? Do organizations that have a DTS, perform better than a similar organization that does not utilize this tool? What are the best practices in managing and administering a DTS. Will a DTS become a source of sustained competitive advantage, or is it a fad?

f. What are the implications of a DTS on the role of HRD as a strategic function in the organization? Does a DTS support employees in a way that creates a culture of expertise? What impact does a DTS have on organizational structure and how work gets done?

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Interactive Multimedia Use For Training In Selected Oklahoma City Businesses: A Survey and Case Studies

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Human Resource Development (HRD) can have difficulty separating the fact from fiction related to interactive multimedia (IM). Survey was used to gain an understanding of how HRD professionals, trainers, and other business executives in profit oriented organizations in the Oklahoma City area viewed interactive multimedia (IM) use for training within their organizations. Subsequently, case study methodology was used to obtain in-depth descriptive information of how and why interactive multimedia was actually used for training within specific selected organizations. The study revealed the actual on-going use of IM was greatest in the lowest cost technology CD-ROM. This technology also has the lowest expert trainer involvement and learning curve. The study also revealed the non categorization of IM as a training/non training tool within organizations.

A traditional assumption of formal training has been that multiple learners move through a body of course material in unison, usually guided by a single training expert. Unfortunately, this approach lacks flexibility. The underlying assumption is not always realistic: a large group of learners who can begin acquiring the content at the same point in time, work at the same pace, and finish the training program with the same knowledge and skills. Similarly, traditional training techniques required the availability of competent trainers. In many organizations, and for many learners, when these conditions could not be met, training needs remained unfulfilled (Woollard & Morrison, 1995). With interactive multimedia (IM), training needs can be met, thereby increasing the flexibility of training and the speed with which training content can be put to use. IM can also increase the speed of knowledge dissemination by decreasing the amount of time required by individuals to learn new material (Dennis, 1994).

Related Literature

Trainers have historically used such devices as slide projectors, textbooks, videocassette recorders, film projectors, and other media to present instruction. Each of these device provides specific benefits for presenting certain types of information (Copeland, 1992). However, with IM, these benefits can be integrated, thereby, reducing the amount of time learners require to acquire training content (Charp, 1995). Advocates such as Dennis (1994), Gayeski (1993), Gery (1991), Pina and Savenye (1992), and Strong (1992) have expounded on how IM technology is causing organizations to change from the traditional ways of conducting business.

Many advocates believe organizations that seize the opportunities inherent in the IM revolution will capture important competitive advantages, while those organizations that lag behind will be forced to scramble in a race to catch up or be forced out of business. To meet today's business challenges, managers are adjusting their business practices, changing their mental models (Senge, 1990), and are keeping abreast of new developments in performance and related technologies (Piskurich, 1993; Tapscott & Caston, 1993). Adopting novel and related

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technologies in the early stages of the technology lifecycle is one way for organizations to compete in the global economy. It limits the risk of obsolescence due to non support by vendors and courseware producers, and the loss of benefits that could have been obtained had the technology been used earlier (Braden, DeWeaver, & Gillespie, 1991).

However, reviewing the projected use of IM highlights the tension between the promise and the reality for the technology use in business and industry training. A study conducted by Oz and White (1993) on IM use among corporate organizations in America revealed that while IM is a rapidly growing field, training still has a small share of the market. Similarly, surveys by Filipczak (1992) and *Training Magazine* (1993, 1995) showed only small increases in the use of IM technology for training in corporate American organizations, with 17% use in 1992, 20% in 1993, and 27% in 1995. Some reasons for the slow adoption of this training technology given its potential benefits have been identified. For example, Gayeski (1993) reasoned that most organizations, trainers, and human resource development professionals do not understand how this technology might be applied to their work.

Problem Statement

Interactive multimedia technology popularity seems matched only by its mystique. The technology is being touted as the latest and greatest training tool ever used in organizations (Gayeski, 1993), but the adoption rate of the technology is slow and low (Anderson, 1995; Filipczak, 1992; Oz & White, 1993). Further, many HRD professionals, trainers, and other business executives are interested but unsure about how their training needs can be met with IM (Amthor, 1992-1993). To make sound decisions, HRD professionals, trainers, and other business executives need systematically gathered information about how IM technology is actually used for training within organizational contexts.

Research Objectives

The research objectives of the study were two-fold. The first objective was to gain an understanding on how HRD professionals, trainers, and other business executives in 271 Oklahoma City profit-oriented organizations viewed IM use for training in their respective organizations. The second objective was to obtain in-depth descriptive information of how and why IM was used for training in specific selected organizations.

Methodology

The study methodology included survey and case study. Meeting the first objective involved surveying HRD professionals, trainers, and other business executives in 271 Oklahoma City profit oriented organizations. The survey included: a) an examination of the specific types of media use, b) organizational and training department's perceptions of IM use, and c) changes caused by using the media. The survey instrument was reviewed by experts, pilot tested, and then administered using the strategy identified by Babbie (1973, 1986).

The survey instrument replicated items from the American Society for Training and Development (ASTD) (1993) National HRD Executive Survey on Performance Support and Interactive Media. The instrument was modified to include information about the organizations' demographics, Compact Disc Interactive, Digital Video Interactive, Laser Disc Read-Only-Memory, and Virtual Reality. Other modifications included the exclusion of performance support as a topic and the replacement of 1995 and 2000 with 1997 and 2002 respectively. Eighty five organizations provided useful information.

The second objective was to obtain in-depth descriptive information of how and why IM was used for training within specific organization contexts. Meeting the second objective involved using structured interviews in seven purposively-selected organizations. The interview guide was reviewed by experts for face and content validity and administered using the protocols identified by Yin (1989, 1993).

The interview guide included questions such as: a) how organizations were using interactive multimedia for training (performance improvement/support), b) how training was available using interactive multimedia, c) how interactive multimedia was available (i.e., on-site, off-site, out-source), d) how was interactive multimedia accessible, and e) reason(s) for interactive multimedia use. Seven organizations provided beneficial information.

Results and Findings

The survey data provided information about the use of IM techniques, the training departments' roles, the evaluation of IM, the future of IM, and the obstacles to IM implementation. Some highlights of the survey data included the following:

1) About half of the organizations have used or are using IM, about 30% are using the technology in an ongoing basis, and about 13% have used the technology as a test or pilot, b) all the IM activities in the have/are being used category were accounted for by 61% of the respondent organizations, and c) IM usage varied across techniques: CD-ROM was used in 68.2% while none of the other technologies was used by more than 20% of the organizations.

2 Training department led the IM effort 26% of the time. The role of the training department as a leader varied across specific IM techniques. For example, 60% of the Distance Learning activities were led by the training department; however, less than 20% of CD-ROM use was led by the training department. Further, none of the activities in EPSS, Laser Disc ROM, and Virtual Reality was reported to have been led by the training department.

3) IM was not often evaluated or measured. However, when it was accessed, a variety of measures were used. Some examples included formal and informal feedback evaluations; training evaluations; improvement in employee skills; surveys and research; increase in sales and bottom line; conferences; and improvement in productivity.

4) In identifying IM trends in the next three to five years provided varied answers. The most frequent response relative to the organizations' IM use was employee training. Other responses focused on communication and information gathering.

The case studies data provided information of how and why IM was used for training within the specific selected organizations. The case studies were summarized as follows: a) the individuals interviewed knew how IM was used within their organizations to fulfill their training needs and b) organizations were using IM technology was in response to changes in the business contexts. Specifically, organizations were using IM for formal training, on the job training, retraining, and cross training, and education. The case studies data also revealed various reasons why IM was used. Some of these reasons included competition both locally and globally, proactive (i.e., being ahead of the competition), business necessity, technology driven, and employee driven.

The study revealed that reports of IM use were neither all hype nor all truth. The study showed that organizations were using the technology at various levels and ways to respond to a dynamic external environment. The study also revealed that some HRD professionals lacked knowledge on the use of IM technology for training.

Implications and Future Research

This study identified potential reasons for the slow and low adoption of IM technology for training. From the systems theory perspective, the lack of knowledge could result in the HRD professionals and trainers inability to convince organization decision makers of the benefits of this technology for training, thereby, stifling the organizations from gaining the benefits of adopting novel technologies in the early technology lifecycle.

This study provided information about how IM technology was used by one population of HRD professionals, trainers, and other business executives. The level of IM usage for training when integrated with the identification of lack of knowledge as a barrier to IM implementation challenges academicians who serve the target population to integrate knowledge and skills of IM into HRD courses. Additionally, it challenges HRD professionals to consider how they compare with others in using this technology for training and other business related activities. The results should not be generalized beyond the population studied and more research is needed in other populations. The information obtained can be applied to expand theories and models of IM use. Understanding the diversity of HRD professionals and trainers IM technology use across organizations can result in theories and models that better reflect actual practice.

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A Taxonomy of Employee Development: Toward an Organizational Culture of Expertise

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This paper presents a taxonomy of employee development comprised of five categories of employee competence. The categories represent increasingly complex levels of knowledge and experience related to a particular task or set of tasks. The proposed taxonomy is based on three issues that have emerged in regards to the relationship between employee competence and job performance. HRD issues and implications are discussed.

This paper presents a taxonomy of employee development comprised of five categories of employee competence. The categories represent increasingly complex levels of knowledge and experience related to a particular work task or set of related tasks. Such a taxonomy can be useful to organizations seeking to maximize the contributions of their employees, for the benefit of both organizations and individuals. Specifically, the paper describes the taxonomy and the five categories of employee competence that comprise the taxonomy. Second, the paper discusses three emerging points about the relationship between employee competence and job performance, which serve as the rationale for the proposed taxonomy of employee development. Finally, the paper discusses the HRD issues and implications of the taxonomy. The underlying goal of this paper is to contribute to our understanding of how employee competence relates to organizational performance, toward promoting an organizational culture of employee expertise.

Taxonomy of Employee Development

Employee development is defined here as the planned process of enhancing an employee's abilities through a variety of work-related learning opportunities. Thus, employee development represents more than formal training programs alone. In addition to training programs, it may include other programs and initiatives such as job rotations, mentoring, outside educational experiences, and so on (Jones & Jacobs, 1997). The focus of the proposed taxonomy of employee development is not on the process itself. Instead, the taxonomy is about the outcomes that result when individuals engage in the process. These outcomes are represented on the taxonomy as five levels of employee competence: 1) novice, 2) specialist, 3) experienced specialist, 4) expert, and 5) master.

Similar to Gilbert (1978), competence is generally regarded as the potential of individuals to use specific sets of knowledge and skills. The term employee competence is used here to denote the relative abilities of individuals with respect to a particular work task or set of related tasks. It is presumed that employees may achieve different levels of competence for the various tasks on their jobs. Each level of the taxonomy represents greater knowledge and experiences than the level preceding it. Thus, it is assumed that employee development programs can be designed to help employees achieve specific levels of competence.

The levels of competence presented here are drawn from earlier works on the topic of human expertise as presented by Hoffman, Shadbolt, Burton, & Klein (1995). Table 1 summarizes the five levels of competence in the proposed taxonomy of employee development.

Novice. Novice employees are unable to meet job expectations because they have little or no knowledge and skills and experience with the task in question. Novices are relatively easy to identify in organizations, as they typically represent individuals who are newly hired, recently transferred, or have been newly-promoted.

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Specialist. As a general category, specialist employees are perhaps the most interesting, and sometimes, the most misleading level of development. On the one hand, by design, specialist employees make important contributions to their organizations because they can reliably perform routine tasks; that is, they can perform known tasks such as complex laboratory tests. On the other hand, because they have limited information, they lack the ability to be effective in doing anything much beyond the routine tasks.

Experienced Specialist. Experienced specialists are unique in that they usually have had many opportunities to perform the same tasks and can do them with much skill. Experienced specialists are often mistaken for having greater abilities than they actually do, simply because of the ease in which they perform tasks. Even so, experienced specialists lack the combination of knowledge and experience to be truly considered experts in their work.

Expert. Many experienced specialists become experts, but not all of them necessarily achieve this level of development. Experts have characteristics distinct from specialists, and confusing the categories often has detrimental affects on organizational performance. By definition, being an expert means that the individual possesses expertise in certain aspects of their jobs. Thus, the notion of expertise refers only to those individuals who are considered experts. The psychology literature has a long history of describing the unquiet nature of experts, consistently showing that experts organize and use information in ways that differ substantially from others around them (Chi, Glaser, & Farr, 1988).

Among other behaviors, experts have unique ways of viewing and solving problems. Experts have a propensity to engage in progressive problem solving -- a technique by which they create problem situations in which none existed beforehand from which hypotheses can be generated and confirmed. In this way, experts intentionally impose theory onto problems, with the intent of enriching their own understanding of the situation.

Master. The master employee represents an elite group of experts. Their actions and judgments often set the standards for all others beneath them. Master employees are the individuals who are regarded as "the" expert among experts. They are the role models from which others can learn and judge the adequacy of their own knowledge and skills. Others turn to the master employee when an interpretation of information is required. Master employees are often asked to be the trainers of others, but their high level of knowledge and experience may be unnecessary for many training situations.

Figure 1. Taxonomy of Employee Development

Category	*Description*
Novice	Literally, one who is new to a particular work situation. There is often some, but minimal exposure to the task beforehand. As a result, the individual lacks the knowledge and skills necessary to meet the requirements set to adequately perform the task.
Specialist	One who can reliably perform specific tasks unsupervised. But the range of tasks is limited to the most routine ones. Often it is necessary to coach individuals at this level to help them use the most appropriate behaviors.
Experienced Specialist	One who can perform specific tasks and who has performed those tasks many times. As a result, the individual can perform the tasks with ease and skill. It is possible to remain at this level for an extended period of time.

Expert	One who has the knowledge and experience to meet and often exceed the requirements of the task. The individual is distinguished and highly-regarded by peers because of his or her consummate skills, or expertise. The individual can use this ability to deal with routine and non-routine cases, with an economy of effort.
Master	One who is regarded as "the" expert among experts, or the "real" expert among all others. He or she is among the elite group whose judgments are looked upon to set the standard and ideals for others.

Employee Competence and Job Performance

Underlying the need for the proposed taxonomy is the realization that the relationship between employee competence and job performance is more complex than what it might first appear. The relationship between these two variables has been a particular concern among human resource development (HRD) scholars and practitioners. As stated, employee competence is the potential to use specific sets of knowledge and skills. Job performance is the measurable outward manifestation of individuals having used that knowledge and skills. Recent research has clearly shown that employee competence can have positive affect on measures of job and organizational performance (Torraco & Swanson, 1995). For instance, Jacobs (1994) has demonstrated how employees receiving structured OJT made fewer defects and had increased training efficiency than employees receiving unstructured OJT. Recently, however, there has been a move toward refining the basic understanding between competence and performance. Three related points of discussion have emerged in this regard:

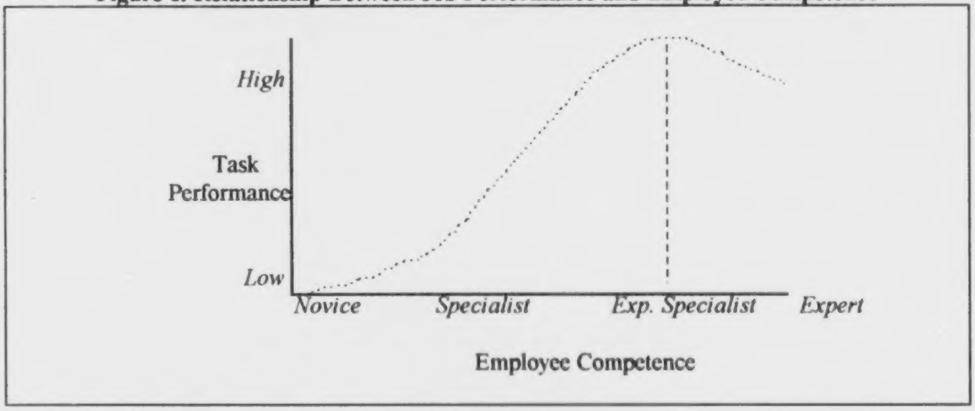
1. There is not a continuous linear relationship between employee competence and job performance;
2. Employees may not need to develop high levels of competence in all tasks to meet and exceed job requirements; and,
3. It is incumbent upon organizations to more precisely match competence levels and job performance requirements.

The first discussion point is the growing awareness that there is not always a continuous linear relationship between employee competence and job performance. That is, more competence placed on top of what is required does not necessarily have an additive effect on performance. In fact, there is more likely a point of diminishing returns in which more than the required competence may hinder or reduce job performance, not enable it. As shown in Figure 1, the relationship for any given task is perhaps more nonlinear. Measures of job performance would likely rise, but begin to level off when it approaches and then passes whatever level of employee competence is required to achieve the desired task performance. In this instance, performance in fact begins to decrease as employees move beyond the level of an experienced specialist. Hence, this discussion point suggests that the relationship between job performance and employee competence would be more a curve than a straight line.

This first discussion point further illustrates the often delicate relationship between employee competence and job performance. It is a common frustration for both organizations and customers when employees have less than the required level of competence. And, there may be frustration of a different sort when employees have too much competence to perform the task. For instance, consider when a computer consultant attempts to troubleshoot a particular computer problem, a task which he or she is not competent. One consequence of this situation is that the problem will unlikely be solved. Another consequence is that the customer often feels compelled to become part of the problem-solving process, perhaps just to escape from the uncomfortable situation.

Problems can also arise when employees have a higher than required level of competence. In this case, the same computer problem may get solved, but the solution may be larger than what is actually needed by the customer and, perhaps, the solution is more costly than what otherwise might be the case. I am reminded of the advice given by a well-regarded computer consultant who wanted to remove all files from my hard disk to solve my frequently occurring lock-up problem. In fact, all that was needed was the removal of stray files left over from previously removed programs. Paradoxically, knowing too much may also be a hindrance in meeting the desired performance requirements.

Figure 1. Relationship Between Job Performance and Employee Competence



The second discussion point is that employees may not need to develop high levels of competence in the tasks they are expected to perform, and still be able to *meet* or *exceed* job expectations. Indeed, employee competence should be viewed within its proper performance context. For instance, the level of competence required of employees in a quick oil-change organization presumably differs from employees in an auto-repair organization. In a relative sense, employees in the quick oil-change organization should perform at the specialist level in terms of tasks related to the lubrication of automobiles. There is a need to perform the prescribed tasks, quickly, accurately, and safely. In contrast, employees in the auto-repair organization may require more in-depth knowledge and experiences, perhaps, say, at the experienced specialist or at least one individual at the expert level of competence. With this greater knowledge and experience, they would be able to diagnose why, for instance, the oil light comes on when the automobile is driven. Clearly, both organizations require employees who are competent. But, what determines whether the level of competence is appropriate is based on the requirements imposed by the organization.

The final discussion point is that it increasingly seems incumbent upon organizations to more precisely match the performance requirements of tasks and levels of employee competence. To some extent this match is done whenever a work analysis is performed (Swanson, 1994). But, this analysis generally seeks to identify the single best level of competence only. However, more and more, it has become necessary to understand how the same tasks might be represented along differing levels of competence. This additional information has become critical as organizations have placed greater emphasis on improving work processes (Rummler & Brache, 1995). Work processes are the series of activities, usually crossing jobs and functional areas, that culminate in completed products or processes. As a consequence, employees should know more about the various tasks on their processes (Jones & Jacobs, 1997). Cross training enables employees to perform more tasks on the processes, but whether employees should, or even can, possess equal levels of competence on those tasks might be questioned.

For instance, a nutritional product manufacturer has identified a contract development process, which results in a completed sales proposal to be presented to a large institutional customer. Employees in the Pricing Department require high levels of competence in the tasks of calculating unit costs and profit margins. At the same time, employees in the Contract Sales department require the same high levels of competence in interpreting nutritional market data, presenting contract presentations to customers, and so on. Clearly, in order for the work process to function smoothly, all employees should receive some training on the other's tasks. Contract Sales employees should understand the basic principles of calculating unit costs and profit margins, even to the extent of doing some calculations themselves when a faster cycle-time is required by some customers. In turn, Pricing employees should understand what is involved in making a contract presentation to an institutional customer, and even participate in one presentation if possible to immediately address pricing questions.

HRD Issues and Implications

The proposed taxonomy of employee development seeks to help HRD professionals and managers better understand the different levels of employee competence and to match those levels with the requirements of specific work tasks. In doing so, the taxonomy may be subject to several issues of concern. First, there may be the initial reaction that the taxonomy would have the undesired affect of limiting employee development goals, instead of promoting them. That is, the taxonomy would impose upper limits on what employees would be learning and doing on their jobs, based on static organizational requirements. Clearly, this would be self-defeating for both individuals and organizations. Employees should be given planned development opportunities to achieve the highest levels of performance possible. Achieving average levels of performance is not the desired intent of the taxonomy. Instead, the intent is to achieve high performance, but within the context of meeting established job requirements, though these requirements should not be considered immutable.

Simply put, organization managers want competent employees to do the best of what is expected of them. In the long-term view, however, it would be incorrect to limit individuals who are performing at, say, the specialist level. If appropriate, planned employee development programs should be made available to help those individuals move beyond their present levels of competence. Having employee development programs serve this function is a central notion of operationalizing an organizational culture of employee expertise.

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An Integrated Needs Assessment-Evaluation Process

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Needs assessment and evaluation processes are receiving increasing attention as HRD practitioners are striving to help organizations meet their goals. Although there is often a passing mention of the other process, most of the literature and research on needs assessment and evaluation is separate. The purpose of this paper is to propose an integrated process and discuss the potential benefits of considering these two processes in tandem.

Needs assessment and evaluation are strategic HRD processes receiving renewed attention in both research and practice (Holton, 1995, 1996; Jedrziewski, 1996; Phillips, 1994, 1995; Swanson, 1994). In performance improvement as well as instructional design models, these processes are considered critical because they are where the HRD professional collaborates with leaders in the organization and determines how HRD and other interventions can help support the organization's objectives and strategies (Brinkerhoff & Gill, 1994; Robinson & Robinson, 1995; Stolovitch & Keeps, 1992; Zemke & Kramlinger, 1982).

Theoretical Framework and Problem Statement

In most literature, needs assessment and evaluation are considered to be discrete processes, or distinct sub-processes of a larger system (Kirkpatrick, 1994; Phillips, 1991; Rossett, 1990). Although there is sometimes mention that these processes are interrelated, the nature of the relationship is not clearly described (Jedrziewski, 1996; Robinson & Robinson, 1989; Rothwell, 1996). For example, as part of the evaluation process, measurements may be taken before the intervention. Is that part of the evaluation process or the needs assessment process?

Brinkerhoff (1988) as part of his six-stage evaluation cycle, includes both assessment and evaluation and addresses the interrelationship between the two. Holton (1995) also discusses the connection between needs assessment and evaluation through an illustration that compares the organizational, job or task, and individual types of assessment with four corresponding types of evaluation. This is a very helpful framework for understanding that data and measurements from the needs assessment become the baseline for comparison in the evaluation. As Brinkerhoff (1988) says, "Stage one [needs assessment] is not complete until it has developed a definitive answer to that question "How will we tell if the HRD has been worthwhile?" (p. 51).

Kaufman and Keller (1994) support "comparing results with intention" as a definition of evaluation. The implication in this definition is that intended results are identified in advance and those intentions are compared with the actual results. Wade (1994) proposes the use of a chart that compares pre- and post- information and uses the terms "pre-training baseline measure," "post-training target," and "post-training actual measure" in relation to analyzing the results and impact of training. Swanson and McClemon (1996), in their Performance-Learning-Satisfaction (PLS) Evaluation System, include several potential data collection points on a time line, including before, during, and after the program or intervention. In all three of these models, there is a "pre" or "baseline" or "intention" that is identified and compared to a later result. Are these measures or expectations determined as part of the needs assessment process, or as an additional step as part of the evaluation plan?

Recently, the limitations of Kirkpatrick's (1976) training evaluation model have been discussed (Alliger & Janak, 1989) and new models proposed (Holton, 1995, 1996; Jedrziewski, 1996;

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Swanson, 1996). These models hold great promise for an evaluation process that is based in research and identifies valid interrelationships between domains. While the focus of these efforts has been on creating evaluation models and processes, the connection with the performance analysis or needs assessment process is not explicit. The purpose of this paper is to build upon the evaluation work and create a framework that integrates the needs assessment and evaluation processes.

Research Question and Methodology

The primary question to be answered by this research is: How can the needs assessment and evaluation processes be integrated? The methodology used to answer this questions is an adaptation of Dubin's (1976) guidelines for theory building in applied areas. He focuses on the construction of theories and models that have immediate and direct application, and delineates between the role of the theorist-researcher and the practitioner. Dubin (1976) states that,

> The underlying motive for this modeling is either (1) that the real world is so complex it needs to be conceptually simplified in order to understand it, or (2) that observation by itself does not reveal ordered relationships among empirically detected entities. A theory tries to make sense out of the observable world by ordering the relationships among elements that constitute the theorist's focus of attention in the real world. (p. 26)

This integrated model was developed by analyzing empirical research as well as practitioner literature about needs assessment and evaluation processes. This research resulted in the identification of numerous elements and potential relationships between the elements. The proposed integrated process is just an initial step in the development of a valid model. The elements, the relationships, as well as the utility of an integrated process need to be tested. Further discussion, debate, and research is necessary to expand and improve this model.

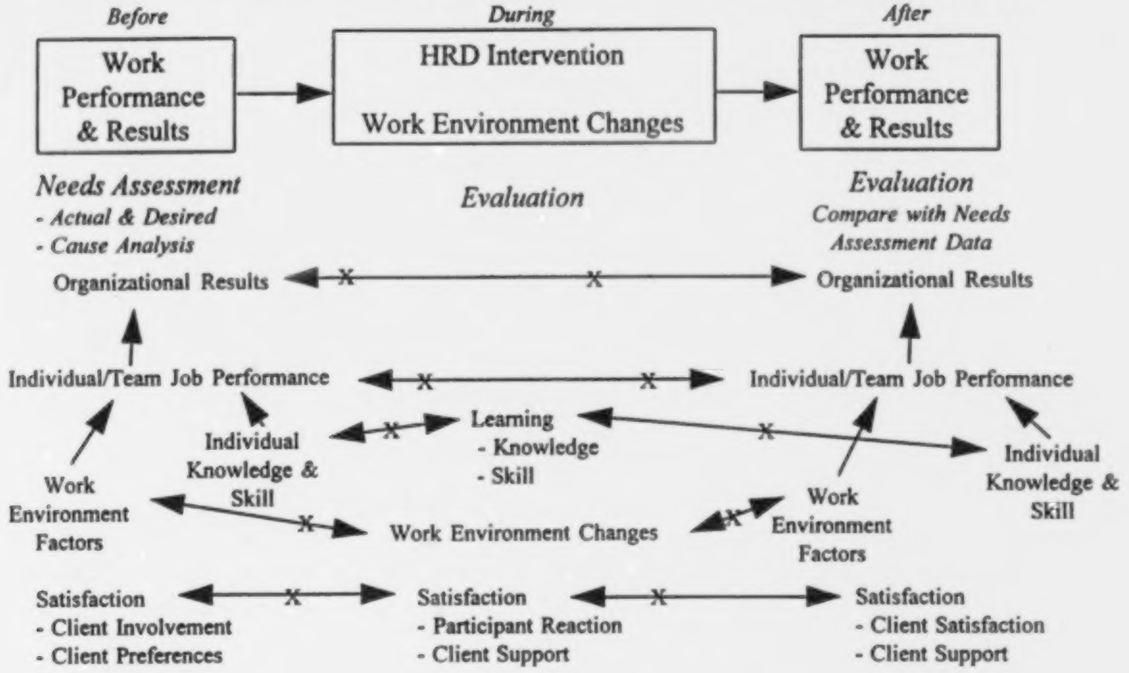
Proposed Process

The proposed process, which integrates needs assessment and evaluation, follows a performance improvement approach. This means that the needs assessment takes either a "problem" or "opportunity" orientation to a workplace issue. The integrated process consists of three phases -- before, during, and after the HRD intervention and/or work environment changes. Indicators or measures are determined and compared across these three phases in the areas of organizational results, individual/team performance, individual knowledge and skill, work environment factors, and satisfaction. (See Figure 1). The first phase (before) is the familiar needs assessment process, while the second (during) and third (after) phases are the evaluation measures.

"Before" Phase The desired and actual organizational results, in business terms and/or dollar amounts are determined along with the desired and actual job performance that relates to those results. This job performance can be for one individual or for a team. The cause of the gap between the desired and actual performance and results is explored, looking for potential interventions that will address the root cause. If the cause of the problem or the obstacle for the opportunity is a lack of skill or knowledge, then training or another HRD learning-focused intervention will be part of the solution. Other potential interventions that address non-learning related problems include those that address the myriad of work environment factors, such as changing the compensation system, the performance management system, or the design of the job. Often, there are multiple and interrelated causes of the problems, therefore, a systems approach is taken to the solution as well.

During this needs assessment phase, it is helpful for the HRD professional to work collaboratively with the clients in the organizational system, those who have a stake in the desired performance improvement and who have the authority make changes that may be indicated by the analysis. One measure of customer satisfaction during this phase is the level of involvement of the client. Additional information that can be collected at this phase is related to the participants'

Figure 1. An Integrated Needs Assessment-Evaluation Process


Before
During
After
Work Performance & Results
HRD Intervention
Work Environment Changes
Work Performance & Results
Needs Assessment
- Actual & Desired
- Cause Analysis
Evaluation
Evaluation
Compare with Needs Assessment Data
Organizational Results
X
X
Organizational Results
Individual/Team Job Performance
X
X
Individual/Team Job Performance
Individual Knowledge & Skill
X
Learning
- Knowledge
- Skill
X
Individual Knowledge & Skill
Work Environment Factors
X
Work Environment Changes
X
Work Environment Factors
Satisfaction
- Client Involvement
- Client Preferences
X
Satisfaction
- Participant Reaction
- Client Support
X
Satisfaction
- Client Satisfaction
- Client Support

X = internal or external factors/events

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preferences regarding the time, place, and format of the upcoming HRD interventions. This can be useful in the design and implementation phase. After the needs assessment phase, the HRD program as well as the other interventions related to the workplace changes are designed and implemented.

"During" Phase The second phase of the process (during), moves into the evaluation process. Measures of participant learning can be taken throughout and at the end of the HRD intervention. This measure relates directly to the individual knowledge and skill gaps that were identified in the assessment phase. The work environment changes are put in place as well, which might involve a new compensation plan or performance support system. Tracking and understanding these changes is important because they will affect the work environment in which the participants will be operating. The customer satisfaction indicators during this phase include the participants' reaction to the HRD intervention as well as measures of the client's support of the intervention system. Furthermore, while HRD interventions and work environment changes are taking place, other events, expected or unexpected, will be occurring which will have an impact on the individuals involved in the process. In today's dynamic organizations, the HRD practitioner must be aware that many internal and external factors, other than those related to the prescribed HRD intervention or work environment changes, can impact the organizational results, the job performance, the individual's knowledge and skill, the work environment factors, or client satisfaction. For example, if layoffs were announced during the time span of this needs assessment-evaluation process, many of these elements, such as client support of the HRD intervention, and individual job performance, would likely be affected.

"After" Phase Finally, the new systems are in place and the participants are back on the job after increasing their knowledge and skill in a particular area. The "after" evaluation involves measures that relate back to the data collected in the two previous phases. After an appropriate length of time, the organizational results and job performance are measured and compared to the actual and desired measures from the "before" phase. Similarly, individual skill and knowledge can be compared to the "before" as well as the "during" measures. The work environment factors are monitored to see if the changes are positively supporting the desired job performance. Customer satisfaction issues in this phase include client satisfaction with the process and the results, as well as their ongoing support. This support is often most important in the work environment factors, which might include additional resources. As mentioned earlier, it is also important to identify potential additional factors which may have influenced the results on any of the elements.

Hypothetical Case

In order to illustrate this process, a simplified hypothetical case will be described. In the "Before" phase, the following information is obtained. An organization wants to increase the customer satisfaction ratings from the current 3.5 to 4.2 on a 5.0 scale (actual and desired organizational result) in order to continue to compete in the competitive market. The cause analysis indicated that one reason for the low rating is that the customer service reps are leaving callers on hold too long and are then transferring them to the wrong people; the desired job performance is that callers be on hold no longer than 5 seconds and that they be referred to the correct department on the first transfer (actual and desired job performance). It was determined that the reps need to become more familiar and adept with the new features on the phone system and better understand the work of the various departments in order to make the correct recommendation (actual and desired knowledge and skill). Work environment factors that inhibit the desired job performance include an open space work area where many people walk by and interrupt the reps while they are on the phone with customers. During the needs assessment process, clients are actively involved and the reps are asked about their preferences regarding the format of the training as well as the redesign of their work space.

In the "During" phase, training is conducted for the reps, job aids are created which they will use back on the job, and their work area is partitioned so that they are not interrupted while on the phone with a customer. Their learning is measured by written knowledge tests as well as skill demonstrations on the phone system, and their satisfaction with the training is determined through reaction evaluations. Client support is measured by attendance levels and supervisor participation in the training.

In the "After" phase, the organizational results and individual/team job performance are compared with the desired results identified in the "Before" phase. In this hypothetical example, the customer satisfaction ratings rose to 4.3 (organizational results) and the customer service reps are now keeping customers on hold for less than 5 seconds and have a 90% success rate of referring customers to the correct person (job performance). For individuals who are having difficulty, their knowledge and skill (learning) are retested and compared to their scores before and during the HRD intervention. If they have not retained the skill and knowledge, then other interventions are prescribed. If they show that they have the necessary skill and knowledge, then additional work environment factors that are affecting their performance are explored. The original work environment changes (making the work space more private) are analyzed to see if they help achieve the desired results. Reps report that the lack of interruptions is very helpful in their goal to focus on the customer's needs. Satisfaction is determined through indications or measures of client satisfaction and support, such as jointly celebrating success, and additional requests for performance improvement consultation from the clients. One unexpected event that had an effect on the reps' job performance was a recall on a product that resulted in a flood of phone calls. Once the calls started, the job performance targets were not being met, so the reps and their managers had to develop a quick plan to address the issue.

This hypothetical example is overly simplified in order to quickly work through the elements of the process. The intention is to make the model more concrete and to see how it can actually work in practice. One important part of this process is the collaboration between the HRD practitioner and the clients. If the integrated needs assessment-evaluation process is planned together, then the client becomes aware of the many factors that affect performance on the job and the HRD practitioner becomes a true partner in helping the organization be more effective.

Contribution to HRD

This is a preliminary model, one that has been recently developed to encourage discussion, debate, suggestions, and modifications. By raising the issue, however, those who are researching and practicing HRD or performance technology will be aware of (a) the strategic nature of these processes, (b) the interrelationships between needs assessment and evaluation, and (c) the implications for practice. For example, one implication would be to increase efficiency in the overall process by designing needs assessment strategies and instruments that support follow-up evaluation comparisons.

Practitioners using this type of model may find it useful when working with clients to help them understand the systemic nature of the process and to "justify" the time spent on needs assessment. Often clients are interested in evaluation data, which they often see as after the fact, and they are not aware that the baseline data that will be used for comparisons (ROI calculations, etc.) must be collected before the design and implementation of the intervention. Furthermore, by including measures of customer satisfaction in the integrated process, the partnership between HRD and clients is acknowledged and supported. In these challenging times, with the emphasis on HRD's role in supporting performance improvement in the workplace, this integrated needs assessment-evaluation approach can help improve the collaborative nature of the process, along with efficiency and results.

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Needs Assessment in Practice

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Many human resource development (HRD) articles and books emphasize the importance of assessing performance and learning needs before implementing performance solutions. While the theory of needs assessment is well charted, its utility remains substantially unexplored. This multiple-case study showed that HRD professionals initiate needs assessment in varied situations and for multiple purposes and that they achieve diverse results.

Imagine that you purchased a new software product that was accompanied by comprehensive reference guides. The guides promise "easy-to-use" materials that will bring you up to date on current innovations and will let you maximize the software's capabilities. By studying the guides, you can learn about all of the software's features, the logic inherent in their design, the context for using each feature most effectively, and the details on how to enact precise solutions to specific problems. In such a situation, do you imagine that you and other users will immerse yourselves in the reference guides before using the software? Or, will you apply the product's features at random, guided by intuition, informed guesses, and the "advice" of co-workers?

Similar questions should be asked about needs assessment models. Human resource development (HRD) articles and books emphasize the importance of assessing needs before implementing solutions. Further, many comprehensive guides and models purport to be easy to use, provide information about the logic inherent in organization systems, and detail how to enact solutions to specific organizational problems. In general, their authors claim that systematically learning and applying a specific model or approach will result in improved organizational and individual performance.

In addition, self-reported success stories from authors of the models abound. However, rigorous study that describes actual assessment practices in the workplace has been limited (Ng, 1988; Lewis and Bjorkquist, 1992; Tannenbaum and Yukl, 1992). Tesolowski, Newton, and Cureton (1988) contended that needs assessment remains in the "twilight zone" of management because it is not understood. This contention was supported by suggestions that the HRD literature lacks discourse based on expert practice (Lewis and Bjorkquist, 1992). Lewis and Bjorkquist indicated that little is known about the actual approaches taken by expert HRD practitioners to solve performance-related problems, including the methods they use, the shortcuts they take, or the questions they ask. This paper bridges needs assessment theory and practice by describing the process and the results of needs assessment within the context of contemporary HRD practices. The goal of the study was to describe practitioners' frames of reference and needs assessment practices as they *are*, not as they *should* or *might* be.

Research Methodology

To accomplish the study's goal, the multiple-case study methodology as described by Yin (1989) was used. This method is characterized by three descriptive phases: design, single-case data collection and analysis, and cross-case analysis.

Design. The initial phase of the research process involved three primary tasks: developing the theory, selecting the cases, and designing the data collection protocol. The following sections describe each task.

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Developing the theory. Theory development began with a review of the HRD literature, including needs assessment definitions, theoretical underpinnings, and models. Commonly used terms such as need, needs assessment, needs analysis, and performance analysis do not have common meanings among performance technologists and HRD professionals (Sleezer, 1992). Although the terminology varied, four key points of agreement were apparent. *First*, the process of determining needs connects the process of performance interventions to an organization's performance problems or opportunities (Mitchell and Hyde, 1979; Swanson and Gradous, 1986; Robinson and Robinson, 1989). *Second*, the process is one of investigation, problem solving, and decision making (Moore and Dutton, 1978; Zemke, Standke, and Jones, 1981; Georgenson and Del Gaizo, 1984). *Third*, the process precedes the implementation of a solution (Watson, 1979; Zemke, Standke, and Jones, 1981; Rossett, 1987). *Fourth*, the process distinguishes performance problems that should be addressed by training from those requiring other approaches (Nadler, 1982; Laird, 1985).

The HRD literature also contains many models for analyzing performance and training needs. Each model, through a step-by-step approach, operationalizes one or more strategies for identifying individual or organizational needs.

Needs assessment models have different starting and ending points (Sleezer, 1992). For example, some models assume application of the analytical process before a specific performance or training need is identified (e.g., Moore and Dutton, 1978; Wexley and Latham, 1981; Zemke and Kramlinger, 1982; Goldstein, 1986; Smith, DeLahaye, and Gates, 1986; and Cascio, 1987). Other models assume application of the analytical process after a specific need or problem has been identified. Examples include Rossett's (1987) Training Needs Assessment Model, Mager and Pipe's (1984) model for analyzing performance problems, and Watson's (1979) conceptual framework. Both the Dodge (1987) and Goldstein (1986) models concluded the needs assessment process with developing course objectives. Rummler's (1981) principles of performance analysis ended with the actions taken to correct the problem. A number of models extended the process beyond identifying and implementing a solution to reporting actual intervention results (Zemke and Kramlinger, 1982; Rossett, 1987; Robinson and Robinson, 1989).

The literature explicitly detailed few perceptions about the *results* to be achieved by implementing a needs assessment or about how those results should be evaluated. However, one key output of the process appeared to be information. Lampe (1986) identified 16 areas of useful information obtainable through the assessment process. Some approaches and models used, in subsequent phases or steps, the information obtained during the process of determining needs to design instruction or to manage human performance. Hansen's (1989) model, for example, resulted in the identification of solution components and parameters useful in developing the performance improvement program. According to Georgenson and Del Gaizo (1984), other results of the needs assessment process included identification of priorities to help solve an organization's most critical business issues and the participation of management in the needs assessment process.

Following the literature review, theory development continued with the identification of the study's propositions and questions. Propositions helped to limit the study, focus the attention of the researchers, and pinpoint possible sources of evidence. They were as follows: HRD practitioners use needs assessment as a key tool for gathering information and for making decisions concerning problems that require different kinds of solutions; HRD practitioners use needs assessment to identify and/or connect needs assessment to performance problems; and HRD practitioners understand and apply needs assessment theory and models. This study pursued four research questions: (1) What was the experience of the HRD professional who performed the needs analysis? (2) What was the background of the situations in which needs assessments were initiated? (3) What process was used to conduct needs assessment? and (4) What were the results of needs assessment?

Selecting the cases. The second task in the study's design phase involved defining the logic behind participant selection and specifying the selection criteria. For this study, each case focused on one needs assessment -- as defined by the practitioner -- that had been conducted within the past year. Prospective study participants were identified from the 1995 list of Oklahoma members of the American Society for Training and Development (ASTD). The criteria for participating in the study were that the individual: had to be employed in a business organization in a manufacturing or service industry; had an internal HRD focus; had conducted a needs assessment within the last year; had to be currently employed by the organization in which the needs assessment was conducted; and had to be able to participate in the research process. Potential participants were both recruited and screened using telephone interviews conducted by graduate students enrolled in a needs assessment class. The final study participants comprised ten practitioners whose organizational roles included vice president of HRD, HRD manager, training manager, training instructor, and manufacturing services manager. Participants represented a major manufacturer of marine engines; a pipeline company; the United States Postal Service; a gas and electric company; three banks; a regional medical center; a manufacturing company; and a major metropolitan daily newspaper.

Designing the data collection protocol. The final task in the study's design phase involved identifying the data sources, designing the case study protocol, and developing a data collection instrument. According to Patton (1980), sources of qualitative data can include documents, archival records, interviews, direct observation, participant observation, and physical artifacts. This study used interviews, observations, and written documents.

The case study protocol contained the following four categories (Yin, 1989): overview of the case study project (project objectives and auspices, case study issues, and relevant readings); field procedures (including credentials and access to study sites, general sources of information, and procedural reminders); case study questions (specific questions to keep in mind when collecting data, table shells, and potential sources of information for question answers); and guidelines for the case study report (outline, format, documentation specifications). The case study protocol included a 30-item interview guide to use during semi-structured on-site interviews. The interview guide requested information in four areas: experience of the HRD professional performing the needs analysis (three items); the background for the needs assessment (five items); the needs assessment processes (13 items); and the needs assessment results (nine items). In addition to requesting information, the guide was structured to help the study participants frame, define, and describe needs assessments from their own unique perspectives.

Single-Case Data Collection and Analysis. The second phase in this research methodology involved conducting the individual case studies and preparing the individual case reports. Preparing for data collection involved forming and training data collection teams. Data collection teams were comprised of students enrolled in a graduate-level needs assessment program. Team training had the following goals: (1) to develop case study investigator skills; (2) to develop the requisite knowledge for competent data collection; (3) to realize general expectations for team performance; (4) to develop team competence in specific data collection procedures (such as the semi-structured interview); and (5) to maintain the confidentiality of the data collected. Preparation for data collection also included students' active participation in developing the case study protocol. Prior to conducting the individual case studies, a pilot case study was conducted. Results indicated the need to reword some of the items on the interview guide to improve clarity.

Each data collection team selected two cases and used the interview guide to conduct a semi-structured interview with the needs assessment practitioner for the case. As soon as possible after the interview, each team completed the second phase by writing an individual case report from the raw case data (including the team's notes and other written information). Each case report included descriptions of the setting, the people, and the activities; responses to the semi-structured interview guide; direct or paraphrased quotations; and the observers' comments.

Cross-Case Analysis. The study's final phase involved drawing cross-case conclusions, modifying theory, developing policy implications, and preparing the cross-case report. A separate cross-case report team initiated this final phase. The team analyzed the individual case reports and case files and studied related documents. Triangulation and peer examination were employed to increase research validity. Triangulation involved using multiple investigators, sources, and methods to confirm the findings and analyses. Peer examination involved data review by investigators unfamiliar with the case and by the teams that had collected the data. Specific tactics identified by Yin (1989) were also used to increase construct validity. These tactics included using multiple sources of evidence, establishing a chain of evidence, and having key informants review the draft case study report. In addition, development of the case study protocol and a multiple-case database increased the study's reliability by documenting its procedures.

Results

The study yielded ten in-depth descriptions of HRD practitioners' perceptions about needs assessment processes and results. (Space limitations necessitated a focus on the cross-case results.) The following sections present: information gathered in response to interview guide items for the four research questions pursued, cross-case results, and conclusions.

Practitioners' Experience Level. While the most common HRD role of participants was "manager," practitioners represented a variety of roles. Half of the HRD professionals who participated in the study were training managers. Two were HRD managers, two were organization vice presidents, and one was a manufacturing service manager. Most participants (all but one) had received some level of HRD training. Four had completed undergraduate courses in HRD (two of whom held bachelor's degrees in the field), four had taken HRD courses or workshops, and one had completed a graduate-level course.

Background of Assessment Situations. Needs assessments were implemented in response to a number of situations, had a variety of foci, and were expected to accomplish multiple purposes. Practitioners' descriptions of *the problem or opportunity* that initiated the needs assessment can be grouped into six categories (followed by number of responses in parentheses): to begin addressing a specific performance problem (3); to respond to a problem brought forward by someone else (2); to be a part of an organizational culture change effort (2); to add new life to training programs (1); to be a part of a yearly budgeting process (1); and as the initial effort of a new trainer (1). Participant comments included the following:

> "Needs assessment is required by the company once a year, to assess the training needs of the customer service department."
> "The training council discussed discrepancies, providing the opportunity to design training to address the discrepancies."

When asked to select from among four *purposes* for conducting the needs assessment, practitioners responded as follows (with frequency in parentheses): clarify needs (2), identify needs (2), determine needs (1), formulate needs (2), and multiple reasons (3). Participant comments included the following:

> "Previous training had been a 'shotgun' approach.' The need now was to use a 'rifle approach' to determine specifics."
> "It is important to have meetings, get people involved, and listen to specific needs. This process fosters a good feeling of involvement. It shows we are trying to develop a program by considering their concerns."
> "Needs must be formulated. Because we are a large corporation, we must ensure that employees have opportunities not just in their own area, but in others as well."

In terms of the *focus* of the needs assessment, the majority of the participants (six) indicated multiple foci: performance improvement solutions integrated with organizational development and/or career development. Of those who indicated a single focus, two named "training" while one named "organization change." In terms of *expected accomplishments*, only one indicated a single objective: to identify learning objectives. The remaining responses were as follows (with frequency in parentheses): get everyone involved (6), learn more about the situation (5), understand performance needs (5), achieve an end goal (4), and move from the current situation (3). Participant comments included the following:

> "The needs assessment was not initiated because of a particular problem, but was implemented to get everyone involved, identify learning objectives, and to understand performance needs."
> "We used an eclectic needs assessment, one that addresses all the options listed. The needs assessments of the organization are ongoing."

Needs Assessment Processes. Of the 30 items on the interview guide, 13 items addressed needs assessment processes. Responses revealed that: practitioners held diverse perceptions about various aspects of the process; needs assessments frequently combined categories described in the literature; and no assessment focused solely on performance improvement. Practitioner comments about the number of people involved in the needs assessment included the following:

> "Usually, needs assessment is a one-on-one process between the manager and the HRD practitioner. Sometimes our 'floor' employees are involved."
> "Of the 1,600 employees within the organization, 30 liaisons were selected to 'represent the good of the whole' to meet with HRD to brainstorm. The purpose is for the liaisons to contribute and to 'cascade' the information throughout their work areas. This is done to create buy-in."

Practitioner comments about the models, skills, rules-of-thumb, or thinking processes used in assessing needs included the following:

> "No comparison can be made to literature because techniques in books are rarely followed with the possible exception of an organizational development book."
> "Looking at the past is a more realistic approach to determining future needs."

Results of Needs Assessment. Participants identified the following actions or interventions that were recommended as the result of a needs assessment: training solution needs were addressed, cooperation was improved, training programs were improved, organization culture was improved, understanding was improved, and experts were identified. Participant comments included the following:

> "Best workers were identified as 'experts' and were named trainers for new workers on the line."
> "Specific training needs and classes based on the recommendations are now in play."
> "Personnel were realigned, so the culture of the organization was changed."
> "An annual calendar for all areas and specific training dates is compiled quarterly."

Post-assessment follow-up included: identification of training solutions to address need; implementation of a training program; establishment of expectations for HRD; discussion of survey results among employees and implementation of changes; and a determination regarding meeting needs. Six participants indicated that employees became more productive after assessment solutions were implemented. Each of these respondents indicated that specific behavioral changes were evident. Eight participants indicated they did not use strategies identified in the literature. Participant comments included the following:

> "The assessment solution was implemented and used to build a training system."
> "The follow-up system will include observation data, periodic departmental checks, job performance information, and a cost-benefit assessment."
> "We need information to identify ways to produce tangible results for financial officers."
> "The company became more effective, positively affecting the 'bottom line.'"
> "We can now provide more detailed, monthly information about costs to senior management and include projections of costs and expenses over 10 years."
> "A career development program was initiated and certification requirements were met."

Cross-Case Results. Once synthesized, the results revealed that few practitioners, regardless of their education, knew or used needs assessment models or approaches. However, practitioners identified positive results and actions/interventions from the needs assessment process. The synthesized results did not support the propositions because the needs assessments had served vague goals or broadly defined purposes, few practitioners had linked the goal and the needs assessment, many practitioners had difficulty defining the financial benefits and the specific accomplishments to be expected, and few practitioners had applied needs assessment theories and models.

Conclusions. This study has important implications for HRD research and practice. Similar to the users of the computer software, the approaches of practitioners seemed to yield some genuine solutions, some new problems, and little improvement in the user's ability to approach future situations methodically and purposefully. The reality is that users rarely study the reference guides and models and few even consult them.

This study was limited because: only 10 cases were studied; comparing the cases on one commonality -- needs assessment -- may obscure issues and complexities within each case; and the researchers were responsible for interpreting the data, and their views may have influenced the results. However, the study's results point to the diversity of needs assessments in today's dynamic business environment. Few practitioners rely on theories and models that appear too complex or abstract. In this situation, practitioners could benefit from additional research and model-building aimed at practical needs assessment tools.

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An Integrative Job Analysis Model for Human Resources

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Job analysis serves as a foundational activity for most core processes of human resource management and human resource development. This paper explores one company's efforts to develop an integrated job analysis model which can serve a variety of HR / HRD needs within an organization.

Job analysis serves as a foundational activity for most core processes of human resource management (HR) and human resource development (HRD). Unfortunately, most of the job analysis efforts within organizations are poorly coordinated and result in overlapping data and inefficient results. What is needed to overcome these problems is an integrated job analysis model which can serve as a solid foundation to the core HR / HRD processes within an organization.

This paper explores one company's effort to develop an integrated job analysis model which is capable of serving multiple HR / HRD processes. First, the company, Piper Jaffray Companies, Inc., is briefly described along with the structure of its HR and HRD functions. Next, some of the literature of job analysis is reviewed. The specific job analysis needs of Piper Jaffray is then explored along with some of the pressures which resulted in the search for an integrative job analysis model. Next, the process which Piper Jaffray undertook to develop the model and a description of the model itself is presented. Last, some of the lessons learned throughout this whole journey are discussed.

Organizational Background

Piper Jaffray Companies, Inc. (Piper Jaffray), is a medium sized, 3,500 employee firm which offers a variety of investment and financial services through its three wholly owned subsidiaries: Piper Jaffray Inc., Piper Capital Management Inc., and Piper Trust Company. Founded in 1895, Piper Jaffray is based in Minneapolis, Minnesota, and provides general securities brokerage, corporate and public finance, investment management and trust services to individual and institutional investors, corporations and public entities. Piper Jaffray operates 81 branch offices in 17 Midwest, Mountain, Southwest and Pacific Coast states. Total operating revenue for 1995 was $431 million.

The investment services industry, like many service industries, is going through a period of rapid change which is placing pressures on Piper Jaffray. Some of these changes include impending modification of federal regulations which affect the investment and banking industries, the increase of competition from discount brokerages, decreasing profit margins, and changes in the demographics and investment habits of the population.

The HR department at Piper Jaffray has grown as a function of internal requests for services. That is, as various services were requested of HR, processes and systems were put into place to accommodate them. The HRD function within the firm consisted of decentralized islands of training departments which were housed in HR, Information Services, and Sales. This method worked sufficiently for a large portion of the company's history. However, as Piper Jaffray has continued to grow, as its operations and services have become more complex, and as pressures to perform have increased, the company has had to re-examine its ability to provide effective human resource services in an efficient manner.

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Some changes have already been made to improve the structure of HR/ HRD within the firm. All training was centralized under an umbrella department, named Piper Institute. Piper Institute has continued to provide training services throughout the firm, but has also broadened and redefined its mission to performance based HRD. Additionally, Piper Institute and HR undertook a joint project to clearly define the mission and needs of the organization as a whole, audit the existing HR/ HRD functions, and make changes to these departments so that they better aligned with the firm. Changes being contemplated include the departmental structure of HR / HRD, core processes, required skill sets, and metrics for performance. One early result of this investigation was a realization that job analysis must play a more integral role in the future for HR and Piper Institute.

An Introduction to Job Analysis

Job analysis has always played an important role in the area of human resource management and human resource development. Even though the concept of job analysis and its associated terminology has been beset with semantic confusion within the literature, a simple definition of job analysis would be "the act of documenting any relevant features of a given job, including features of the job itself, features of the environment in which the job is situated, and features of the persons who hold or might hold the job." What qualifies as "relevant" is dependent upon the ultimate use of the data which emerges from the job analysis.

Job analysis has been described as the "hand maiden" for practically all of human resource management (HRM) broadly construed (Noe, et al., 1994; cf. McLagan, 1989, for a discussion of the distinction between HRD and HRM). Job analysis serves as a foundational activity for compensation, selection and staffing, career development and pathing, performance assessment and review, legal compliance, and other core HR processes. Numerous methods for conducting job analysis appear in the literature such as the Position Analysis Questionnaire (McCormick & Jeaneret, 1988), Functional Job Analysis (Fine, 1988), Job Element Analysis (Primoff & Eyde, 1988), Critical Incident Technique (Flanagan, 1954), Competencies (Spencer & Spencer, 1993), task analysis, and others (Gael, 1988;

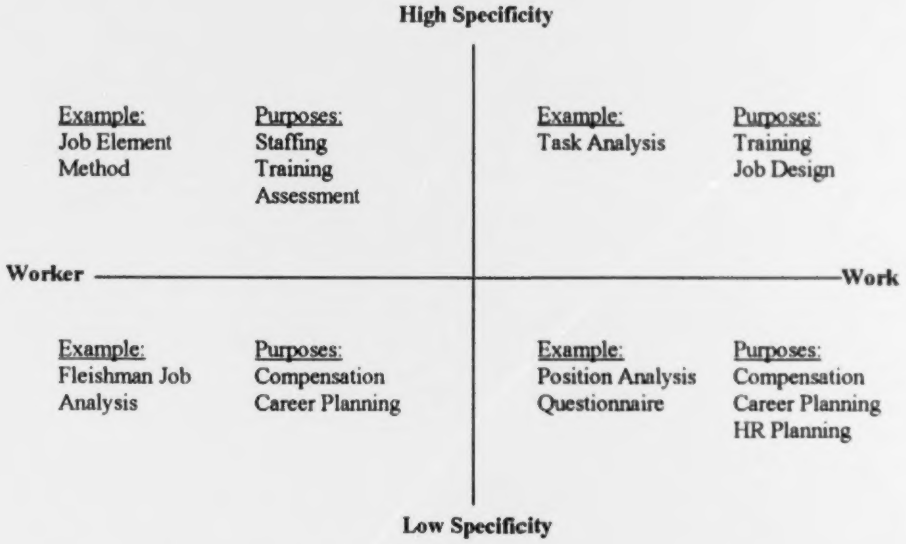
High Specificity
Example:
Job Element Method
Purposes:
Staffing
Training
Assessment
Example:
Task Analysis
Purposes:
Training
Job Design
Worker
Work
Example:
Fleishman Job Analysis
Purposes:
Compensation
Career Planning
Example:
Position Analysis Questionnaire
Purposes:
Compensation
Career Planning
HR Planning
Low Specificity

Figure 1. - Job Analysis Classification: Adapted from Noe et al., Human Resource Management, 1994

Harvey, 1991; McCormick, 1976). Each have been developed with a particular purpose in mind, and research has suggested that each method is best suited to provide data for one or a small subset of core HR / HRD processes (Levine, et al., 1988).

Job analysis techniques can be divided along a number of dimensions. Perhaps the most useful classification scheme was provided by Noe et al. (1994). Noe classifies job analysis according to two dimensions: from high specificity (position specific) to general, and from worker oriented to work oriented (see figure 1). This results in a four quadrant classification scheme: high specificity work oriented, high specificity worker oriented, low specificity work oriented, and low specificity worker oriented. The use of the job analysis data typically determines what type of job analysis is required. For example, the compensation function typically requires general, worker specific information. Training, on the other hand, typically requires fairly specific, work related information. It is important to note that this classification is a rough approximation of the reality of both individual job analysis techniques and the purposes of those techniques.

Another useful classification scheme was offered by Harvey (1991). In this model, job analysis techniques are divided again along two dimensions. The first dimension is the same as the Noe et al. (1994) model: specificity of information. Harvey divides this dimension into high, medium, and low. The second dimension, however, is concerned with the scale metric of the job analysis method. There are three different metrics according to Harvey. The first is cross-job relative rating scales which permit one to make meaningful comparisons across different jobs. Scales which use behaviorally anchored rating scales (BARS) typically fall into this category because a task or trait is rated relative to some specified metric, not just relative to other tasks or traits of the same job. The second category is within job relative rating scales. These types of scales allow one to make inferences only relative to other tasks in a given job. For example, relative importance scales are of this type because relative importance is only meaningful within a specific job. A secretary and a diplomat might rate negotiation skills as highly important to their jobs, but we would not conclude that these ratings mean the same thing in these two very different occupations. The last rating scale is qualitative, in which no numerical comparisons can be made either within or across jobs.

Job analysis must be carried out to effectively and legally perform numerous HR / HRD functions. One could develop training programs, staffing guidelines, or performance reviews without a thorough analysis of what knowledge, skills and abilities workers must possess to be competent, but the quality of those programs would be seriously undermined. Furthermore, it would be a practitioner's nightmare to be confronted with the prospect of having to conduct multiple job analyses for all of the different processes for which they are used in HRD and HRM. Unfortunately, the literature generally recommends different techniques for each different purpose (e.g., Noe, et al., 1994, Harvey, 1991), which is an unsatisfactory solution to a perplexing problem.

Job Analysis at Piper Jaffray - A Statement of the Problem

One thing which became clear during the initial phases of the audit of HR / HRD was that there were some serious issues with the way that job analysis was being conducted throughout the firm. Multiple methods were being used for multiple purposes. These methods were oftentimes overlapping, collecting similar data in some cases, and completely different data in others. The multiple methods were cumbersome not only for the HR personnel and line managers conducting the job analyses, but also for the employees who were the focus of the data collection. For many HR / HRD processes, no job analysis methodology was being employed at all. The situation as it currently exists is depicted in figure 2.

This only depicts the current situation. Another factor which is impacting job analysis methods at Piper Jaffray has to do with the type of services being requested from HR and Piper Institute. As human resource issues continue to become more important throughout the firm, more sophisticated services are being sought. For example, Information Services has recently requested a system which will allow them to develop job structures, career pathing and individual development plans for their employees who work in an environment of fast changing skill sets and requirements. Operations has recently requested a method to define the jobs of supervisors, assess current supervisors based on those definitions, develop an equitable compensation structure, develop career paths, and provide for training and development plans. Each of these requests have some important characteristics in common. They are very sophisticated, they seek to develop a comprehensive approach for dealing with human resources, and they rely heavily on an up front investment in job analysis.

Job Analysis Method	**HR / HRD Process Served**
Compensable point-factor survey	Non-exempt compensation
KSA analysis derived by supervisor	Interview guidelines
KSA analysis derived by employee Goals and objectives	Performance review Performance management Development planning
Task analysis KSA analysis	Job definition and job description

Figure 2. - Job analysis methods currently being used at Piper Jaffray Companies, Inc.

The combination of the inadequacies of the current system and the nature of customer requests has caused HR and Piper Institute to rethink the role of job analysis within the firm. First, it was decided that job analysis must continue to play a role as the foundation of core HR / HRD processes. This is true not only from a quality perspective, but from a legal perspective as well. Second, and more profoundly, it was decided that Piper Jaffray needed an integrated job analysis model which would allow us to collect the data needed for the core HR / HRD processes in one sitting. Conceptually, the type of model which was needed is pictured in figure 3. At the center of this model is the job analysis, which serves as the foundation for all the outputs of the core processes.

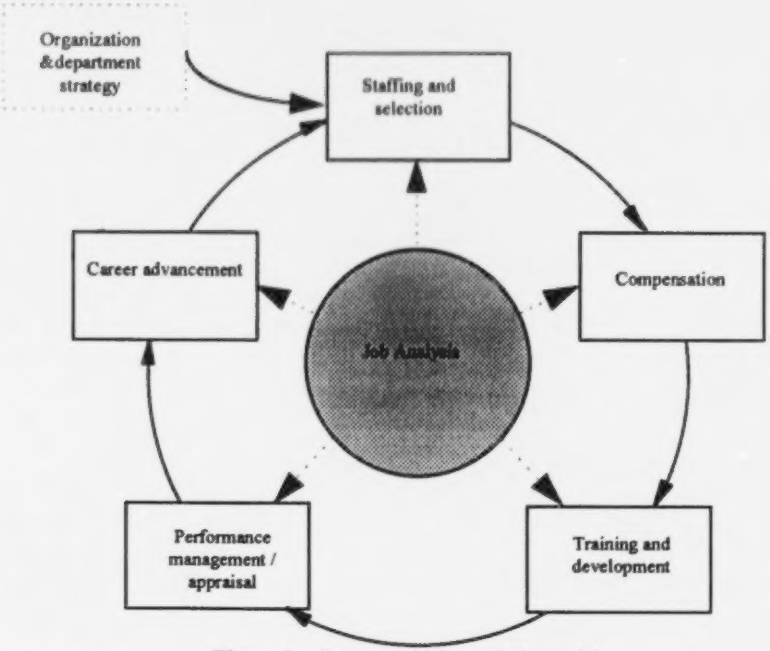
Organization &department strategy
Staffing and selection
Compensation
Training and development
Performance management / appraisal
Career advancement
Job Analysis

Figure 3. - Integrated job analysis model

Researching and Developing an Integrated Job Analysis Model - A Case Study

Piper Institute and HR joined together to embark on a project which was designed to come up with a job analysis data model, a process for collecting the job analysis data, and processes for converting that data into the necessary HR / HRD outputs such as staffing guidelines, compensation structures and individual development plans. In order to specify what such a job analysis model would look like, process owners of the core HR / HRD processes were interviewed to determine information requirements. Next, we looked to three primary sources for additional guidance in the process. First, the academic and practitioner literature on job analysis was reviewed. Second, benchmarking reports of how other companies have tackled similar problems were examined. Last of all, several consulting firms with expertise in developing integrated job analysis systems were brought in.

By far, the most useful sources of information for this project were the benchmarking reports and the consulting firms. Job analysis models found in the academic literature were for the most part much too complex and cumbersome to be of much use in an organization which has a culture of practicality and simplicity. Additionally, the models most popular in this literature are not ideally suited for the purposes of integration. Rather, they are each designed for a particular purpose such as staffing or compensation. The literature which did mention integrated approaches, such as that on competencies (Spencer & Spencer, 1995) was found to be lacking on specifics of implementation. The benchmarking data, on the other hand, was useful in that it made clear that many other companies are struggling with this very issue. Most firms which we found who were actively working on this type of project were developing custom models and processes which were specifically designed to address their own particular needs. These models ranged from the complex, to the extraordinarily simple. The most useful source of information by far, however, was the various consulting firms who have been working on this issue for some time. Not only have these firms developed job analysis models capable of integrating core HR / HRD processes, they have also come a long way in providing information systems which are capable of handling the data management task. This type of information system is crucial in most cases to make such a project manageable.

The project team settled on a job analysis model which focused on two primary types of information: work specific task information and worker specific competencies. A balance was sought between the dimensions present on figure 1. These two types of information are linked to each other to provide an integrated model. The combination of this information makes up what is called the "job map."

Developing the Job Map

The following steps describe how the job map is created.

1. Derive job specific task clusters - This data can be collected in a number of ways, including process mapping, pre-defined task inventory check lists, surveys, focus groups, or any other of the well known methodologies which produce a list of task clusters describing the major work functions of a given job.

2. Derive ratings of task clusters - The ratings include relative time spent on a task cluster, relative importance of a task cluster, and whether an employee can be trained on that task cluster, or should be selected based on whether they can already perform that task cluster (train versus select).

3. Develop worker specific knowledge, skills, and characteristics (KSCs) *which are required for performing each task cluster* - That is, the KSCs are developed by asking SMEs about their applicability to the task or task cluster under consideration. For example, we would take Task Cluster #1 from step 1 and then develop KSCs which are required for that task cluster. This information, too, can be collected in a number of ways, including focus groups, surveys, or interviews. Knowledge, skills, and characteristics are defined as follows:

Knowledge - What must someone know to be able to perform the task? What data or information must be available in ones "mental bookshelf?" Key question: This person must have knowledge of _________.

Examples:	Knowledge of Microsoft Word Knowledge of EEOC guidelines Knowledge of mutual funds

Skills - What must one be able to do physically or mentally to be able to perform the task? What behavior is necessary? Key question: This person must be able to _________.

Examples:	Be able to fill out an order ticket Be able to effectively run a meeting Be able to calculate the slope of a bond yield curve

Characteristics - What general personal characteristics must one possess to be successful at the task? What should a person who does this task be like? Key question: This person must be _________.

Examples:	Details oriented Motivational Achievement oriented

4. Derive ratings of KSCs - Rank each KSC in terms of relative importance, train or select, and essential or differentiates *as it relates to the task cluster*. An essential KSC is one which a person must have to be able to perform the task, but will not result in exceptional performance. A differentiating KSC is one which is also essential, but also results in exceptional performance if present. For example, "knowledge of mathematics" is an essential KSC for the task cluster "Conduct client investment presentations which result in new accounts", but "being able to build relationships" is a differentiating KSC.

5. Cluster KSCs - Cluster KSCs from all task clusters into common items to derive one set of KSCs from the multiple sets developed from multiple task clusters. For example "knowledge of mathematics" is a KSC which would come up twice in step 3. It is required for the task cluster "Calculate rates of return for various investment instruments" and the task cluster "Develop reports demonstrating the performance of client accounts." During this step, these duplicate KSCs would be clustered into one unique list.

6. Further cluster KSCs into major types - For example, industry specific, interpersonal, technical, supervisory, etc.

7. Develop the "job map":

- List tasks across the top in some order (process steps, contiguity, dependency, ease or other).
- List KSCs down the side.
- If the KSC is essential for a task, then place an E in the intersection. If it is distinguishing, place a D in the intersection.
- Remove any KSCs which are not essential or distinguishing for any task.

	Task Cluster #1 - T	Task Cluster #2 - T	Task Cluster #3 - S	Task Cluster #4 - T
KSC #1 - T	E	D		
KSC #2 - S		E		
KSC #3 - S				D
KSC #4 - T	E	E	D	

Figure 4 - Partial Job Map: T=trainable; S=select; E=essential; D=differentiates

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Using the Job Map to Integrate Core HR / HRD Processes

After this information has been collected, subsets of the job analysis data will be used for the following activities:

Staffing and selection:
All KSCs labeled S (select) will be used to create staffing guidelines and structured interview and selection plans.

Compensation:
Certain KSCs and task clusters as determined by the relative importance and relative time spent scales will be extracted and used as the basis for a point-factor system to develop the compensation structure.

Training and development:
Task clusters and KSCs which are trainable and labeled E will be used for orientation or beginning level training curriculum.
Task clusters and KSCs which are trainable and labeled D will be used for advanced training curriculum.

Performance appraisal:
A combination of task clusters and KSCs based on relative importance ratings and relative time spent will be extracted and used for performance appraisal and development plans.

Career pathing:
Job maps for different jobs will be analyzed to create development plans which map into career paths.

Some Lessons Learned - Results and Conclusions

The most difficult part of this entire project has not been the definition or creation of the job analysis model. Most of the approaches for integrated job analysis models which are offered by various consulting firms or discussed in the literature are more similar than different. The types of data and the data collection methods are well known. It really is just a matter of putting things together in the right way.

What is difficult, however, is the implementation of such a model. Education plays a key role in the initial project stages. Most senior managers and line managers do not really understand what the point of job analysis is and how it is essential for effective and efficient HR / HRD processes. The focus from managers is primarily on outputs of the process, such as individual development plans, staffing guidelines and compensation structures. Consequently, selling senior level managers on integrated job analysis is a burdensome and potentially counter-productive task. A much more fruitful approach is to sell the organization on the outputs which are provided from such a model. Convincing senior managers that they can benefit from quality career pathing and staffing guidelines is much easier then convincing them that an integrated job analysis model is useful. Once you have the buy in on the outputs of the process, then the integrated job analysis model simply becomes one hidden step to achieving them.

Another thing learned which is related to the above is that a pull strategy is much better than a push strategy in getting such a project off the ground. Instead of trying to push an integrated job analysis model, allow the organization to pull towards such a model. At Piper Jaffray, we were having limited success outside of HR and Piper Institute in convincing senior managers that an integrated job analysis model was a good way to achieve many of their objectives. However, when the CIO came to us demanding that a system be created which would allow him to define operation supervisors jobs, create career paths, create compensation structures, and create development plans, the integrated job analysis component was simply a requirement of the project.

One surprising lesson was that the most cutting edge work on job analysis is being conducted within consulting firms, not in academia. The models and ideas we encountered in our discussions with the major consulting companies were far ahead of anything we had uncovered in the literature.

Additionally, many of the job analysis models were accompanied by information systems which were designed to automate the data collection process and to allow automatic generation of core outputs such as interview guidelines or individual development plans. The interaction with consulting firms was by far the most valuable part of the whole process.

An integrated job analysis model can serve as the foundation for core HR / HRD processes within any organization. The details of such a model will be different dependent upon what the specific needs of an organization turn out to be. Some organizations might not even benefit from such a model because of industry, complexity, or culture. However, the potential power of such a model is reason enough to explore the possibilities in most firms. The paper has described the experiences of one such firm who has taken the first steps to making this powerful idea a reality.

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Diversity Management in Nonprofit Women's Health Care Settings: A Qualitative Study of Race, Class, and Gender Influences

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This field study delineates how race, class, and gender influence organizational culture and delivery of care in four nonprofit organizations. Data are compared both within and across sites. Conclusions focus on definitions of cultural diversity, the occurrence of activities which support diversity, and how an organization's diversity philosophy impacts on service delivery.

American organizations need to become expert at managing a diverse work force if they are to compete and succeed in the 21st century. Research in U.S. companies has shown that the organizational experiences of out-group (e.g., women, minorities, handicapped) employees are less positive than they are for majority (Caucasian American male) employees (Cox, 1993). Performance barriers that are created by racial, cultural, and/or sexual differences hinder organizational effectiveness (Haro, 1993). In the absence of programs for valuing and managing diversity, performance and productivity can drop. Turnover and absenteeism are often higher among women and minority American males (Hymowitz, 1989).

The integration of diversity initiatives into health care facilities will require organizational culture change (OCC), the use of organization development (OD) processes and principles, and strategies common to sociotechnical systems (STS) design. Past experience shows that OD applications developed for business settings have not been directly transferable to health care (Nadler & Tichy, 1982; Tichy, 1985; Weisbord, 1976) and fine-tuning has been necessary to experience limited success in applying STS design in health care settings (Chisholm & Ziegenfuss, 1986; Pasmore, Petee, & Bastian, 1986). It is expected that the successful implementation of diversity initiatives in health care settings will also need to be tailored to fit medical cultures.

If diversity management models are to be developed to fit health care organizations, and OD and organizational culture change theories are to be helpful in promoting the management of a diverse work force in health care, much needs to be learned about how diversity is currently conceptualized and addressed in various health care settings.

Statement of the Problem

The importance of learning to manage a diverse work force is heightened by the pressures of competition generated by health care reform and policy reforms at the national level (Mielke, 1994). It is imperative to develop models and theories of diversity management that can be applied to health care; yet, there is a paucity of research on diversity initiatives in health care organizations.

Two commonly recognized areas of work force diversity are race and gender. This awareness stems logically from Affirmative Action (AA) and Equal Employment Opportunity (EEO) programs (Geber, 1990; Schwartz, 1989; Thomas, 1991). Using Gilligan's (1982) work on moral development which questions the appropriateness of comparing men and women within the same cultural framework, Fine, Johnson, and Ryan (1990) studied how the "cultures" of race and gender (i.e., the life experiences one has based on differential treatment due to race and/or gender) help to shape how workers view organizations. The results of their study suggested a theoretical perspective in which race and gender are viewed as cultures. It provides a useful framework for understanding cultural diversity in the workplace.

Another factor that must be considered when addressing diversity management in health care settings is socioeconomic status (SES)/class. Some experts point out that SES/class may be

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a more important variable than race in determining levels of achievement and access to resources (Wilson, 1978). This study was limited to examining the diversity variables of race, gender, and class. Other diversity issues such as handicaps, religion, and sexual orientation are not addressed.

The literature indicates a lack of valuing diversity and managing diversity research in the field itself (Johnson, 1992), and specifically in the area of health care. Johnson (1992) underscores the need for research by asking,

> How are valuing and managing diversity defined by different organizations? [Research should be performed]... (1) to describe the current status of valuing and managing diversity in the workplace; (2) to identify common components of valuing and managing diversity programs and processes.... A descriptive research study would help to establish a baseline from which to proceed in these directions. (p. 12)

Purpose of the Study. This study explains and describes how race, gender, and class dynamics influence the organizational culture and delivery of care in nonprofit women's health care settings by examining four such organizations. Wilkins and Dyer, Jr. (1988) suggest ethnographic and historical methods to get a real understanding of an organization's culture. Marsick (1990) also points out the importance of,

> [examining] "HRD through a variety of lenses and in so doing gain insights that strict adherence to one paradigm does not allow ... a fact that suggests the need for studies that are exploratory and hypothesis building in nature" (pp. 11, 20).

Research Questions. The following questions guided this study of diversity:

1. How do people at different levels of these organizations perceive and define race, gender, and class issues?
2. What activities take place to support diversity with regard to race, gender, and class; and by what processes are diversity initiatives implemented?
3. What impact do managers and employees think their perceptions of race, gender, and class diversity have on staff relations and on the delivery of services?

Methods and Site and Sample Selection

A qualitative design was chosen for this research because qualitative methods are especially well suited to studies that delve into complexities and processes; that study areas for which relevant variables have yet to be identified; that seek to describe innovative systems; that study informal and unstructured linkages and processes in organizations; and that intend to examine *real*, as opposed to espoused, organizational goals (Marshall, 1985). The study of employees' perceptions of race, gender, and class, the impact those perceptions have on interpersonal relationships and service delivery, and the study of informal activities that support diversity management in nonprofit women's health care facilities, fit the criteria for a qualitative research approach (Wilson, 1977).

As in any research, the unit of analysis for this study was determined by the purpose. In this case the purpose was to understand the organizational dynamics surrounding race, gender, and class in women's health care organizations. The unit of analysis was the organization.

Site Selection. This research was site-specific, therefore, purposive sampling was used to select the sites. It is the understanding of the organizational relationship dynamics based on race, gender, and class, or the conceptual model, not the specific research findings, that is intended for application in similar settings. The findings are not intended for use in a generalized fashion. This makes the low external validity of findings that this sampling technique generates acceptable, and perhaps even desirable, since it produces findings with high internal validity (Bernard, 1988).

The four organizations for this field study were selected based on the following factors: type of health care provided; funding source; population density and geographic setting; endurance; and staff and client census composition. These factors provide insight into how funding and location influence diversity management and increase the chances that the phenomena and systems studied, as stated in the guiding questions, would be present (McMillan & Schumacher, 1989).

This study focused on nonprofit women's health care facilities. Therefore, sites that offered gynecological care, obstetrical care, or both were chosen. In terms of funding, nonprofit organizations fall into two broad categories--publicly funded and privately funded. In terms of population density and geographic location, the Office of Budget and Management criteria for Metropolitan Statistical Areas (MSAs) and nonMSAs were used to define population density. Two study sites were chosen from each category. The geographic stipulation was that sites must be located in the southeast. The southeast was studied because of familiarity with the region, access to and relationships with women's health care organizations within the region, and a well documented history of publicly enacted racial tension in this region.

For the purposes of this study, endurance was defined as, in operation for 3 years or more. This time period was chosen because it is desirable to have an organization and staff with some experience in the women's health care field and experience with the patients served by their particular facility. It is also more likely that patterns of relating and processes for interaction have been established in an organization that is not new.

Staff and client-base composition criteria were used to ensure that both the staff and clients were racially diverse. Sites participating in this study had staffs with 10% or more and client-bases with 20% or more of their members coming from racial and ethnic groups other than Caucasian American. This ensured that people had the opportunity to work with and deliver services to people from backgrounds different from their own. In addition to the above criteria there was a good mix of the people, processes, programs, structures, and interactions typically found in a nonprofit women's health care facility (Marshall & Rossman, 1989). The study sites fit the above criteria and represented the four possible combinations of the funding and location variables: urban or rural and privately or publicly funded.

Sample Selection. Since this was an exploratory study that dealt with organizations of disparate size, performing a preset number of random interviews at each site would not ensure the number or type of interviewees needed to obtain rich data. Purposive sampling is a strategy that increases the likelihood that the individuals chosen for interview will be "knowledgeable and informative about the phenomenon of interest" (McMillan & Schumacher, 1989, p. 395). Therefore, purposive sampling was chosen as the most effective way to ensure that at least one employee from each staff level or vocational group had input into the research process and that those informants chosen for interviewing were knowledgeable about the organization (Patton, 1990).

Data Collection and Analysis

The data collection techniques used in this field study were interviewing, participant observation, and artifact collection. Semistructured interviews were carried out with the director, manager, or other highly placed person at each site who functioned as the key informant (McMillan & Schumacher, 1989). The personnel administrator at each site, supervisors, and members of each vocational segment were also interviewed. Each site employed fewer than 20 people, therefore, purposive sampling techniques were judiciously applied to ensure equal representation of supervisors, racial and ethnic groups, and vocational segments.

Semistructured interviews were chosen as the interview type for this study, because of the limits that time and distance put on the amount of time able to be spent on-site, the pace and type of work done in health care settings, and the importance of collecting comparable data in order to enhance the reliability of the within- and across-site analyses. All interviewees granted permission to use a tape recorder. Interviews were professionally transcribed, checked for accuracy and coded.

Participant observation was accomplished within the same on-site time period as the interviews. The staff were aware of being observed; the purpose of the research was explained as that of gathering research on cultural diversity in women's health clinics for a research study and for practical use in the field. Observations of various elements of service delivery, informal "lunchroom" gatherings, and staff interactions and social networks occurred. Field notes of observations, reactions, and assessments were kept in a log and on event analysis forms. Field notes were written into a descriptive narrative at the end of each observation and transferred to an event analysis form which contained the site name, date, brief description of the event(s), and comments and questions regarding the main theme and impressions, explanations, and speculations.

Artifact collection was accomplished by obtaining and reviewing records and documents that related to cultural diversity at each site. Promotional brochures, pamphlets, policy statements, personnel policies, organizational charts, personal and organizational office decor, waiting room magazines, waiting room toys and videos, and other artifacts that provided evidence of the cultural awareness of the organization and the people who work there were examined and noted. After examination of these artifacts a narrative account, including the interpretation of their importance, was prepared. This information was recorded on an artifact inventory sheet which contained the name of the artifact, the agency name and person from whom it was acquired, the date of procurement, a brief description of the item, and comments.

Data Analysis. One can break down analysis into three main phases: continuous discovery of tentative themes, concepts, and minitheories; categorizing of data and data reduction which takes place during and after data collection; and assessing the trustworthiness of the data and drawing conclusions (Marshall, 1985; McMillan & Schumacher, 1989; Miles & Huberman, 1984).

Initially, descriptive codes were used to identify "chunks" of data that dealt with the same phenomenon. As the need to differentiate within broad categories emerged, interpretive codes were utilized. Later in the analysis process explanatory codes were developed to indicate patterns and themes. A definition of codes was developed to aid in the consistent application of the coding scheme. The codes and their definitions were refined as the research progressed. After all data were gathered a revised code sheet and definitions were produced (Miles & Huberman, 1984).

Since this was a multisite field study, the interviews from each site were entered into a computerized textual data base manager for coding and analysis. Batch codings files were constructed based on different characteristics to facilitate the analysis. Once given the particular characteristics and codes to be compared, the computer printed out a complete list of all the text dealing with a particular concept or question. These batches made it possible to compare specific codes within and across particular groups.

Across-site analysis was performed by first building batch coding files for each site. Then comparisons within-site and within-coding categories were generated and within- and across-category clusters were produced. The results of this process assisted in writing the descriptive narrative of findings (Miles & Huberman, 1984). The descriptive narratives are the theoretical interpretation of how race, gender, and class influence the organizational culture and are managed in women's nonprofit health care centers.

Within-site Analysis Site A. This women's health care facility is located in a major southeastern U. S. metropolitan area and is part of a county health department. It is one of five county satellite offices. Of these five satellite sites, this particular site employs and serves the most diverse population within the service area. This clinic employs 14 full-time people, of whom three are Hispanic American, three are Asian American, two are African American, and six are Caucasian American (two of these six also speak Spanish); two of the 14 are male.

Definition of Cultural Diversity and Important Issues. This staff's definition of cultural diversity (CD) centered on people of different cultures, backgrounds and nationalities working together. Various terms were used to describe differences, but not the term race. It seemed to be an organizational cultural norm to avoid using the term race, or at least not to focus on it. It is possible that this staff may have a better understanding of race since they serve so many groups of people from within the same race, (e.g., Vietnamese, Cambodians, Filipinos, and Koreans are all Asian). They indicated that the most important issues that need to be addressed for CD to flourish are the acceptance of differences, understanding different communication patterns, and understanding and acceptance of the differences in culturally-based work ethics.

Formal and Informal Activities that Support Cultural Diversity. Formal activities are defined as activities that are organization-generated while informal activities are those that are staff-generated. Formal activities that had occurred within the previous year were the availability of a cultural diversity workshop, reports from staff who were able to attend the workshop to those who were unable to attend, and the provision of a Spanish class. Informal activities that occurred were ethnic pot-luck lunches, group lunches at ethnic restaurants, discussion of culture and ethnicity around the lunchroom table, screening of Hispanic and Vietnamese MTV-type videos for the staff, exchange of help on language class homework, and some after-hours socializing.

Diversity-based Recommendations for Changes in Service Delivery. Staff believed that service delivery could be improved if all staff were bilingual to some extent, had a deeper understanding of the various cultures of the people thy serve, and like-speaking people were scheduled together. For example, schedule Spanish-speaking people in a block during the time when the most bilingual Spanish-speaking staff would a be available.

Within-site Analysis Site B. This privately funded facility, which is part of a national reproductive health services organization, is located in a metropolitan area of the southeastern United States and has five satellite locations in two states. This particular site employs 10 full-time staff including the organization's administrative personnel. Of the full-time employees six are African American and four are Caucasian American. None of the staff are bilingual. The Director and some of the part-time physicians are the only males employed at the site.

Definition of Cultural Diversity and Important Issues. This staff's definition of CD centered on people with differences, primarily race and gender, working together and the importance of all people being treated the same. They indicated that the most important issues that need to be addressed for CD to flourish are an organization must strive to have diversity before it can be managed, elimination of differential expectations of performance and competence based on racial biases and the need for African Americans to excel in order to succeed, and the need for people to stop criticizing cultural values different from their own.

Formal and Informal Activities that Support Cultural Diversity. Formal activities that support CD are the annual meeting that everyone is invited to attend and the organization's EEO/AA policies. Informal activities that support CD are office parties and lunches for holidays and birthdays, and "Secret Santas" at the Christmas season.

Diversity-based Recommendations for Changes in Service Delivery. Staff believed that service delivery could be improved by hiring some bilingual staff members and by arranging for access to translators. These were interesting recommendations considering that the greater majority of the staff and clients are Caucasian and African American and they reported serving only a small number of Spanish-speaking clients.

Within-site Analysis Site C. This facility, located in a rural southeastern area, is part of the state and county health departments and employs 23 people. Nine of the 13 women's health staff members are housed in the medical building at this satellite location, three are located at another satellite facility about 15 miles away, and one serves at both locations; all 13 staff are female. Six staff members are African American and seven are Caucasian American. Vocational categories were demarcated by race. All the support staff are African American. All but one of the nurses, two of whom are also clinic managers, are Caucasian American; one nurse is African American. The majority of clients are African American. The next largest group are Caucasian Americans, and occasionally an Hispanic migrant worker comes to the clinic for services.

Definition of Cultural Diversity and Important Issues. This staff's definition of CD centered on the mixture of cultures, classes, and races, especially races represented by the staff and clients of the facility. They indicated that the most important issues that need to be addressed for CD to flourish are that race discrimination and denial of the relevance of race must be eliminated, the need for people to be treated equally, the importance of accepting others' values, recruitment of more minority nurses, and open and direct communication.

Formal and Informal Activities that Support Cultural Diversity. Formal activities that had occurred within the previous year were cross-cultural workshops for nurses, meetings on how to attract diverse clients, and inservice training on civil rights. Informal activities that occurred were a Christmas party, birthday and good-by lunches, and open invitations to weddings and "drop-ins."

Diversity-based Impacts on Service Delivery. This site had no recommendations for improvements in service delivery due to the fact that they were focused on handling the negative impacts generated by cultural intolerance. These impacts included: the discontinuation of case management for some patients, poor rapport, and "talking down" to patients, all due to race and class tension; delays in service provision due to interpersonal tensions among staff; and clients' biased expectations that medical and nursing staff will be Caucasian American.

Within-site Analysis Site D. This privately funded site is located in a rural area of the southeastern United States, is part of a national reproductive health services organization, and is composed of a main facility and a satellite located about 20 miles away. Even though some people from the main site were interviewed because they set policy for the satellite site and occasionally work there, the focus of the study was the rural satellite site because of the diversity it possesses. The majority of staff at the main site are Caucasian American. The staff at the satellite clinic are a mixture of Hispanic American, African American, and Caucasian American. The whole organization has 12 full-time employees and various other part-time employees. The entire staff is female and predominately Caucasian American; one receptionist and one clinic assistant are Hispanic American. The three people located at the satellite site are one Caucasian American who speaks Spanish, an Hispanic American, and an African American.

Most of the clients at the main site are Caucasian American and a few are Asian American. The clients at the satellite site are a mixture of mostly Hispanic Americans, and African Americans, Caucasian Americans, and Asian Americans, in descending order of prevalence.

Definition of Cultural Diversity and Important Issues. This staff's definition of CD centered on blending people from different cultures and races who have different traits and who are working together in order to get along well and the importance of the staff reflecting the diversity of the client base. They indicated that the most important issues that need to be addressed for CD to flourish are the need to engage in values clarification, work through one's own biases, and address resistance to diversity; build sensitivity to class-based issues; effective communication; and learn about the effects that culture has on the perceptions of health and illness.

Formal and Informal Activities that Support Cultural Diversity. Formal activities that had occurred within the previous year were training on how to effectively work together, the Christmas party, and participation in the community's Black Awareness Day. Informal activities that occurred during the same time period were group activities at various staff members' homes, birthday parties and lunches, and sharing one's own cultural experiences.

Diversity-based Recommendations for Changes in Service Delivery. Staff believed that service delivery could be improved by having educational pamphlets in more languages, securing access to translators fluent in less common dialects, relocating to a "safer" part of town, and developing and incorporating a program about differences into the organization's operational plan.

Across-site Analysis. The four sites varied in their definitions of cultural diversity, activities that support cultural diversity, impact of diversity perceptions on coworker and patient relationships, and impact on or recommendations for changes in service delivery. Therefore, the goal of the across-site analysis was to determine the common themes across all sites that relate to diversity management and describe any differences in those themes based on employment position or class and race. The three common themes that emerged are based on verbatim answers to interview questions asked of each respondent and are confirmed by policies and field observations.

The three common themes that emerged from the data were: (a) potential promotion and demotion have virtually no effect on opinions about cultural diversity issues, (b) management and employee perceptions of organizational tolerance of bigoted behavior are similar, and (c) managers and employees conceptualize their roles and responsibilities in advancing workplace cultural diversity differently.

Conclusions

The results of this study support three major conclusions. People's definitions of cultural diversity focus on race and ethnicity. When all the other issues are stripped away race and ethnicity are at the heart of most people's diversity concerns. Some respondents acknowledged class as a diversity issue, but it was often the case that class was used in place of or in conjunction with race and ethnicity. A few people talked about religion, educational level, and politics as diversity issues, but none was more salient than race and ethnicity.

The occurrence of formal and informal activities which support diversity do not equate with a diversity program or necessarily indicate a healthy and productive diversity environment. All sites engaged in formal and informal activities which supported diversity. Yet, according to Bowens, Merenivitch, Johnson, James, and McFadden-Bryant's (1993) model of the four evolutionary phases of development of a multicultural organization, none of these four sites were at the nurturing or visionary stages. Most were teetering between defensive apathy and denial and offensive activism.

An organization's unspoken cultural diversity philosophy, in the form of each individual's own perceptions, will impact on service delivery. This was evident in all sites and it was powerfully articulated in Site C. Even though the respondents could not or would not link what impact their perceptions had on delivery of services, behaviors that negatively influence service delivery were apparent (see Site C, *Diversity-based Impacts on Service Delivery*).

Contributions to the Field of HRD and Beyond

This study contributes to the field of human resource development (HRD) by expanding research knowledge about OD and culture change research in nonprofit women's health care settings. By discovering more about health care subcultures and how they deal with race and class the application of OD and culture change theories to the health care field can be improved. Knowledge from this study can also be incorporated into training and development theory and practice regarding valuing and managing cultural diversity .

Other benefits of this study are the hypothesis-generating questions and issues it raises. If replicated in other areas of the country, would the definition of cultural diversity focus strongly on race? It was noted that the introduction of a third racial or ethnic group reduced the tension between Caucasian and African Americans. Is this a common occurrence in the southeast and does the introduction of a third racial/ethnic group reduce Black-White tensions in other areas of the country? Study participants defined cultural diversity. How would they describe a successful diversity program? In these study sites gender was determined to be a nonissue since so few males were employed. Is this generally true in organizations where one gender predominates or is race always the preeminent concern when examined along with gender, even in work settings with a greater number of male and female employees working together?

By gaining a deeper understanding of how race and class influence health care service delivery, this study also has the potential to improve service delivery and health outcomes for patients who utilize these health care services. Of the approximately 3,600 U.S. women's health care centers, 71 percent are small- to moderately-sized reproductive health facilities (Landmark Study, 1995). The nations' women are largely in the hands of such centers and their well-being is surely influenced by how they are treated. It is imperative for these organizations to reduce or eliminate any mistreatment of patients which may be due to diversity issues, regardless of whether the mistreatment stems from differences in race, class, gender, culture, religion, sexual preference, or any other "cultural" variance.

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An Analysis of Diversity Training Provided by Business and Industry

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The purpose of this research study was to select a number of major employing companies with exemplary diversity training programs and diverse workforces and to identify strategies, policies and practices that create work environments that are conducive to the development, retention and promotion of diverse groups in the workforce. This research study has helped to facilitate the implementation of the School-to-Work Opportunities Act by identifying criteria that will help to assure that the environments at work-based learning sites will be conducive to the needs of a diverse student population.

The demographic composition of our society and the workforce has changed considerably and is expected to continue undergoing dramatic changes in the near future (Bolick & Nestleroth, 1988; Johnston & Packer, 1987). According to Loden and Rosener (1991), the demographic change will be away from the European-American male and more towards an increased diverse and segmented population. This population will include women and men of all races, ethnic backgrounds, ages, and lifestyles. It will include people of diverse sexual/affectional orientations, religious beliefs, and different physical abilities, who will need to work together effectively.

Others also agree that modern society is undergoing a historic transition from a predominately white society rooted in Western culture to a global society composed of diverse racial and ethnic minorities (Fernandez, 1993; O'Hare, 1993; Triandis, Kurowski, & Gelfand, 1992). According to the US. Bureau of the Census (1994) projections, by the 21st century today's racial and ethnic minorities who now comprise about twenty-five percent of the U.S. population will comprise nearly one-half of all Americans. In the next century, African Americans, Asians, and Latinos will out number Whites in the U.S.

In addition, the rapid growth in the number of minorities has been marked by an increasing diversity in terms of language differences, cultural beliefs, and other practices within these population groups as new immigrant groups from the 1980s (e.g., Vietnamese, Cambodians, Dominicans, Nicaraguans) have joined earlier immigrant groups of Mexican Americans, Cuban Americans, Chinese Americans, and Japanese. Also, by 2010, Hispanics are expected to supplant African Americans as the nation's largest minority group (O'Hare, 1993).

The significant increase in minority populations also affects market place demands. According to the Population Reference Bureau, African Americans, Asians, and Latinos currently make up about 21 percent of the U.S. consumer base and they are expected to reach 25 percent by the year 2000. In 1990, minority populations spent about $424 billion and they are expected to reach $650 billion by the year 2000 (O'Hare, 1993). To market products and serve a variety of diverse customers effectively, organizations will have to employ a diverse workforce (Jackson, 1991).

Increasingly, workplaces will face the same issues and problems that public schools have been facing with regard to understanding and utilizing the full range of human potential within this very diverse population. People from many diverse groups will be working together to keep business running competitively (Burack & Mathys, 1987; Goldstein, 1991; Griggs, 1995; Jamieson & O'Mara, 1991; Loden & Rosener, 1991; Thomas, 1991). According to Triandis and Bhawuk (1994) only companies that have cultures which support diversity will be able to retain the best talent necessary to remain competitive.

Surveys of business leaders indicate that interest in managing diversity is widespread (Jackson & Associates, 1992). For example, in one study of 645 firms, 74 percent of the

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respondents were concerned about increased diversity, and of these about one-third felt that diversity affected their corporate strategy. When the company executives were asked why they were so concerned about managing diversity, they mentioned the following two primary reasons: (1) perception that supervisors did not know how to motivate their diverse work groups, and (2) uncertainty about how to handle the challenge of communicating with employees whose cultural backgrounds result in differing assumptions, values, and sometimes language skills (Towers Perrin & Hudson Institute, 1990). Some companies have connected higher turnover rates for women and minorities to a work environment that does not support diversity (Cox & Blake, 1991; Kilborn, 1990). Consequently, the lack of support for diversity has incurred excessive recruiting and training costs (Caudron, 1990; Schmidt, 1988).

Even though individuals who are different from White males now constitute the great majority of the our society, and the American workforce, they continue to be perceived as being outside the cultural norm in many organizations. This has resulted in limited career opportunities and low expectations for most diverse populations (Dunnette & Motowidlo, 1982; Loden & Rosener, 1991). In the past, for many reasons women and non-European Americans have not been as successful by any measures in the world-of-work as European American males. We are at a critical point in history where two forces are in a position to reverse this situation: the School-to-Work Opportunities Act and diversity training.

The School-to-Work Opportunities Act provides states with federal assistance to develop and implement a statewide school-to work transition system to assist new entrants to the labor force. An important component of this legislation is the creation of partnerships between education and employers. The legislation seeks to include employers as full partners in providing students with high-quality, work-based learning through job training or work experiences. One of the major goals for this system is to assist all students in the successful transition from school into meaningful, high quality employment.

There are numerous ways in which different individuals have defined diversity. Definitions of the term range from narrow to very broad. Narrow definitions tend to reflect Equal Employment Opportunity (EEO) law and define diversity in terms of race, gender, ethnicity, age, national origin, religion and disability (Wheeler, 1994). Broad definitions may also include sexual orientation, values, personality characteristics, education, language, physical appearance, martial status, life-style, beliefs, and background characteristics such as geographic origin, tenure with the organization, and economic status (Carr, 1993; Caudron, 1992; Thomas, 1992; Triandis, 1994). This research study has focused on diversity in the broadest sense, which includes all the different characteristics that make one individual different from another. The major purpose for defining diversity so broadly is that it is all-inclusive and recognizes everyone as part of the diversity that should be valued. This broad definition is the basis on which this research study was focused, in order to respond to the question of how business and industry train employees to accommodate workforce diversity.

Purpose and Scope of Study

This research project was designed to study a selected number of major employing companies with exemplary diversity training programs and diverse workforces to identify strategies, policies and practices that create work environments that are conducive to the development, retention, and promotion of a diverse workforce, including youths in school-to-work programs.

The term diversity has many meanings in contemporary society. In this project it was used to refer to the increasingly heterogeneous qualities of the emerging workforce in the United States. The ethnic, race, culture and gender composition of school age youth is considerably more diverse than that of the contemporary workforce, and this has considerable implications for the implementation of the work-based learning component of the School-to-Work Opportunities Act. The Illinois Department of Employment predicts that by the year 2000, 90 percent of all new hires in the State of Illinois will be women and minorities.

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An increasing number of youth in the 16 to 24 years old group will be entering the job market by the end of the 1990s. These youth are likely to be more ethnically diverse than the workers in today's workforce (Finney, 1989; Johnston & Packer, 1987; Triandis & Bhawuk, 1994). African-Americans' and Hispanics' birth rate is four times and seven times that of White Americans respectively. Therefore, as a proportion of the youth population, African-Americans will increase from 13.7 in 1980 to 18.5 by the year 2000. Hispanics are expected to constitute 12 to 15 percent of all youth by the year 2000. This increase in their numbers will require business organizations to hire more from the African -American and Hispanic populations (Triandis & Bhawuk, 1994). "The great challenge facing the nation is to prepare a changing population of young people to do new kinds of work. Failure imperils economic health, social progress, and democracy itself" (Hamilton, 1990, p. 1). As our nation's economic conditions get better, the demands for workers will increase and employers will also have to turn increasingly to young people otherwise suffer from a serious labor shortage. These and other statistics indicate that in the future, minority growth will exceed non-minority growth in the work place, thereby promoting the need to understand the implications of workforce diversity.

As business, industry and schools struggle to come to terms with "diversity", the question of how to accommodate workforce diversity has become a primary focus and a major challenge. The question of how to work with employers to implement the School-to-Work Opportunities Act and accommodate the work-based learning needs of a diverse group of students will also become a major challenge.

Many of the nation's major employing companies (many of them multinational corporations) have initiated training for new and continuing employees to try to achieve a wide array of diversity goals in their high performance workplaces. According to Rossett and Bickham (1994) there are a variety of reasons organizations get involved diversity programs. Some of these reasons are: Compliance (they want to do what is expected of them by taxpayers, shareholders, and society); harmony (they want all employees to understand and appreciate each other); inclusion (they want underrepresented employees to succeed); justice (they want to correct past wrongs); and transformation (they want to change the way the organization does business in order to take into account diverse employees, customers, and markets). Diversity training should enable these companies to be better prepared to accommodate the needs to the students placed in their charge for work-based learning. However, such companies are not likely to be geographically accessible to the large number of students in urban and rural settings who will participate in school-to-work programs. These students will more likely be placed in small firms where diversity training is limited if provided at all.

Business and educational organizations that learn to use diversity as an asset will stride ahead of those that don't. The payoff will be increased productivity, higher quality, more adaptable to change, more innovation, improved work relationships among employees, more effective work teams, increased customer satisfaction, and increased job tenure (Carnevale & Stone, 1995; Catalyst, 1993; Cox, 1993; Fernandez, 1991; Jamieson & O'Mara, 1991; Mobley & Payne, 1992; Morrison, 1992; Thomas, 1990; Triandis & Bhawuk, 1994).

Research Questions

This study addressed the following major research questions:

1. What are the barriers that have inhibited the employment, development, retention and promotion of diverse groups in the workforce, and are likely to effect the successful implementation of school-to-work programs?
2. What effective strategies are being used to remove these barriers and what are the implications for training?
3. What are the components of an effective diversity training programs?
4. What goals should be advocated for all students in work-based learning programs?

5. What are the most appropriate ways for school personnel to assist students in work-based learning programs?
6. What are the criteria for determining diversity sensitive work-based learning sites.

Data Collection Methods

This project utilized the following methods and sources for collecting data: In-depth literature review; interviews with diversity experts; on-site case studies of selected diversity training programs; and focus groups with school-to-work directors.

Literature Review An extensive literature review was conducted of periodicals (e.g. business, education, academic, trade, research), master theses, doctoral dissertations, research reports, monographs, books, and other documents, in order to address the major research questions of the study. The literature review was written in a report that described in detail the literature on diversity in the workforce in order to bring about an understanding of the complexity and breadth of workplace diversity issues, and provide information that could be used by educators, as well as people from business and industry. The literature review report included the following sections: The changing society and workforce; reasons organizations are managing and valuing diversity; barriers to managing diversity; strategies for managing diversity; diversity training; benefits of diversity training; types of diversity training; conducting a needs assessment; content of training; selecting a trainer; training methods and techniques; challenges and obstacles of diversity training; characteristics of an effective diversity training program; evaluation of diversity training; and future trends related to diversity.

Interviews Telephone interviews were conducted with twelve diversity experts located throughout the United States (west coast, midwest, and east coast) in order to obtain a stronger knowledge base about diversity in the workplace. Through the extensive in-depth literature review mention above, a list of twenty diversity experts was developed. Then twelve diversity experts from the list were selected based on the following criteria: (a) had experience on working with diversity programs in both public and private sectors; (b) published articles and/or books in the field of diversity; (c) had conducted research on diversity aimed at "real work" applications; (d) served as active diversity consultant with corporate and public-sector clients; and (e) had been involved in diversity work closely related to the topic of this study. An interview guide was also developed to assist in collecting data from the interviews.

Case Studies Case studies (on-site visitations) of eight selected companies with diversity training programs were conducted, in order to have the opportunity to observe and document exemplary diversity training programs and to build on to the knowledge base obtained from the literature review and the interviews with diversity experts. The population for the case studies (on-site visitations) was composed of the 33 multinational corporations in the State of Illinois listed in the book entitled, *Directory of Diversity in Corporate America* (1994). From those 33 corporations, a sample of eight was randomly selected to participate in the study. The companies for the case studies (on-site visitations) were also selected based on the following criteria: (a) Have extensive experience with workforce diversity, (b) are multinational corporations, (c) are allocating resources to diversity initiatives, and (d) have launched successful corporate diversity initiatives.

Focus Groups Focus groups with eight school-to-work directors were conducted to obtain feedback and direction on establishing criteria for determining diversity sensitive work-based learning sites and/or companies that assist in the successful transition of youth into the workplace. After reviewing the total number of school-to-work directors (14) in the midwest a sample of eight school-to-work directors were randomly selected to participate in the focus groups. The type of information that was obtained from the focus groups included the following: The characteristics of the students involved in the school-to-work programs (e.g., gender, age, experiences, disabilities, socio-economic background, educational level, special needs); barriers encountered by students in making the transition from school-to-work; type of assistance that companies can provide to students to help make the transition from school-to-work more successful; and the different variables that make these students diverse and different.

Findings

The following are some major findings based upon the results of the study.

1. The major barriers that have inhibited the employment, development, retention, and promotion of diverse groups in the workplace can be categorized into two types. The first type of barrier is external in nature and comes from the environment. The second type of barrier is internal and comes from the individuals themselves.
2. The six external barriers which are most likely to inhibit the advancement of diverse groups in the workplace include: Negative attitudes and discomfort towards people who are different, discrimination, prejudice, stereotyping, racism, and bias.
3. The six internal barriers which are most likely to inhibit the advancement of diverse groups in the workplace include: Poor career planning, inadequate skill perpetration, lack of organizational political savvy, lack of proper education, low self-esteem, and poor self-image.
4. The six factors most likely to influence diversity in the workplace include demographic changes, global marketplace, economics, people today are more comfortable being different, a diverse customer base, and Equal Employment Opportunity and Affirmative Action programs.
5. The four major reasons that organizations manage diversity include: To improve productivity and remain competitive; to form better work relationships among employees; to enhance social responsibility, and to address legal concerns.
6. The six best strategies for managing diversity include: Training and education programs, organizational policies that mandate fairness and equity for all employees, mentoring programs, performance appraisal systems that are non-discriminatory, outreach programs, and career development programs.
7. Other important recommendations for managing diversity include: Obtain top management support, integrate diversity into all company functions, use a combination of strategies, and create a corporate culture that supports diversity.
8. Diversity training needs to began with increasing awareness of what the concept of diversity is and why it is important. The skill training then should provide the specific information needed to create behavior changes that are required to effectively manage and work within a diverse workforce. Then application strategies and support needs to be provided so that diversity awareness and skills can be applied to improve work performance.
9. The major goals of diversity training are to increase personal effectiveness and organizational effectiveness.
10. The ten components of an effective diversity training program include: Get commitment and support from top management, include as part of the organizational strategic plan, develop programs that meet the specific needs of the organization, create inclusive programs, combined with other diversity initiatives, make attendance mandatory, utilize qualified trainers, provide trust and confidentiality, require accountability, and conduct evaluation.
11. The major goals that should be advocated for all students in work-based learning programs include: Obtain a good education, become knowledgeable about diversity issues, develop a career plan, take responsibility for your success, and learn to be an effective team member.
12. The most appropriate ways for school personnel to assist students in work-based learning programs are by providing student with the following: career guidance; work teams/groups activities; mentoring; role models; diversity awareness and skills; and activities to raise educational and performance expectations.
13. The criteria for determining diversity sensitive work-based learning sites include: Successful in recruiting, hiring and retaining minority employees. minority employees are represented at all levels of the company, absence of discrimination lawsuits, use a combination of initiatives to address diversity, and has a corporate culture that respects and values differences.

14. The future trends related to diversity include: Society will become more diverse and therefore, the workforce and the marketplace with become more diverse; there will be more globalization of corporations, which will lead to a more global workforce, marketplace, and economy; diverse work teams will be a reality in organizations; diversity will become more of a business concern than a social concern, and be more closely linked to competitive strategies; diverse populations will make more money and spend more money and this increase wealth will empower diversity; senior managers will become more involved in diversity issues because they will realize that the diverse workforce needs to be better utilized in order to remain competitive; more training professionals will face the challenge of dealing with backlash; and diversity training will be integrated more with other types of training.

Educational Importance of the Study

The changing work force is one of the most extraordinary and significant challenges facing United States organizations today. Our society is changing quickly and the demographic changes within the American workplace have the potential to affect many aspects of organizational management. It is expected that the extent to which these changes are efficiently and effectively managed will have important impact on the competitive and economic outcome for organizations. Organizations that recognize that they need to fully utilize all members of their work force in order to remain competitive are responding by utilizing a variety of different approaches to manage diversity.

The information from this study can be used in a variety of ways. First, the study helped to provide an interpretation of the diversity process within corporations, which can assist educators in understanding the status of the process within these organizations. From this study, educators can learn about differences in organizational responses to diversity. They can understand the varying levels of diversity concerns within corporations and the different strategies that are implemented to address diversity in the workplace. The information on workforce diversity from this study will enable educators to: (a) revise their curricula appropriately to reflect changes in the workplace; (b) identify workable strategies for accommodating and managing differences in the workforce; and (c) illustrate for their, students the continuing impact of diversity on the organizational culture and climate of these corporations.

Second, this study provided information on the status of the diversity process in several organizational sites which, can be useful to decision-makers, such as human resource managers, training and development specialists, and line managers. The information on workforce diversity from this study can be used for benchmarking within their organizations. In addition, this study may aid in the self-reflective process organizations use to assess their current status and assist them in developing strategic plans that address diversity within their organizations. The information from the study may influence the development of a deeper understanding of diversity processes within organizations. This understanding, in turn, may provide insight and direction for improving practice not only in the field of human resource development, but also in other areas of management. The information may encourage or persuade human resource development practitioners or any person in charge of programs dealing with diversity in organizations to: (a) better assess the needs of the employees, (b) improve the design, implementation, and evaluation of diversity efforts, and (c) identify initiatives to improve the management of a diverse workforce.

Third, the information obtained from this study can be used to help facilitate the implementation of the School-to-Work Opportunities Act and help to assure that the environments at work-based learning sites will be conducive to the needs of a diverse student population. The results of the study can also be used to help school-to-work program coordinators select sites for work-based learning, and can be used to prepare work-site supervisors to work with students who are ethnically, culturally and in other ways different from their current workers. In addition, the information from the study can provide educators, as well as, human resource professionals with guidelines to follow when selecting or assessing workplace environments that are conducive to maximizing the contributions of all workers.

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The Role of Hrd in The Welfare Revolution: Fostering Intergenerational Transformational Learning

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Many proposals have been made to get women off welfare and into the workplace. Despite government initiatives, failure may be inevitable. This article reports on the transformative learning processes of eight African American women who transcended the negative social and economic forces inherent in their backgrounds, revealing factors relevant to their workplace success, and the obstacles that slowed their progression. The potential role of HRD interventions to maximize their success in the workplace is discussed.

A new welfare law, the Personal Responsibility and Work Opportunity Reconciliation Act, went into effect October 1996. Because of this new law, many habitually unemployed will be in the labor market five years from now (Vobejda and Havemann, 1996). The children of these people will be in the labor market early in the next century. The application of these new welfare reform policies should have dramatic effects on the HRD imperatives of organizations in the next decade because increasing the capabilities of the population will likely become the responsibility of their employers.

Welfare reform in the 1990s has implications beyond reducing the federal budget and deficit. The *misery* index of inflation and unemployment in the United States is at an all time low. A major cost is incurred by organizations engaged in the process of hiring employees and high turnover rates create an incredible waste of resources that compound this cost. An additional cost in today's workplace is the situation in which an organization is unable to function at full capacity because it is unable to secure sufficient quantity and quality of employees. If this trend continues into the next century, organizations may find an advantage in developing policies that foster improvement in the quality and quantity of the pool of available employees.

Previous studies look at the current life of welfare and poverty-stricken women and the impact that the current welfare reform initiatives will have on their lives. Many researchers suggest that the current welfare proposals are not the wherewithal that will break the poverty cycle of women. Instead, there is agreement among researchers that the creation of a class of women below their existing poverty line, if the current policy is enforced, will be the inevitable outcome (Aaronson, S., & Hartmann, H., 1996; Bassuk, E., 1996; Kates, E., 1996; Piotrkowski, C., & Kessler-Sklar 1996; Schnitzer, P., 1996).

According to the literature, the current welfare laws did not take into consideration the reality of women who live in poverty. For example, Bassuk (1996) reported that the new laws were primarily enacted out of mythical assumptions about women on welfare and are not applicable to the real context in which they live. The demonization of the poor as suggested by Sidel (1996) in review of the welfare to work laws are said to be simplistic and inadequate solutions to end welfare and break the poverty cycle. Debunking the dependency myths and stereotypes of women on welfare who work for short periods or are continuous users of the welfare system, Salomon, Bussak, & Brooks' (1996) findings show that they are not abusers but are managing based on their complex experiences.

Other studies have concluded that the limitations of the new law do not take into consideration the needs of the diverse subgroups (Brooks & Buckner, 1996; Piotrkowski & Kessler-Sklar, 1996; Kates, 1996; Aaronson & Hartmann, 1996). The new welfare to work policy does not address the barriers to self-sufficiency. These studies provide directions for program initiatives and policy that are more reflective of the reality of welfare recipients who survive in a class of poverty. For instance, new initiatives should take into consideration job maintenance, the issues of violence and abuse, barriers to employment, and education. Other benefits at work such as family access to medical coverage, paid family leave, and quality child care were also identified as important to this transition from welfare to

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work. Looking at deficits in women can and has derailed the poor from making great strides in their socioeconomic advancement. More employer-assisted effort should be given toward guiding the poor into an economic self-sufficient lifestyle (Piotrkowski & Kessler-Sklar, 1996).

This multiple case study research examined the life experiences of eight African American women who grew up in an impoverished environment and became successful in achieving upward mobility. The lives of these eight women, who were in highly responsible positions in the government, private industry, and self-ownership were examined to ascertain the learning processes at work that enabled them to achieve their socioeconomic advancement.

Conceptual Framework

The conceptual framework guiding this study was Mezirow's (1991) perspective transformation learning theory that involves an individual's awareness of her conditions and the reasons why of experience. The individual begins to reflect on the basic assumptions of her earlier years that could lead to a transformation of perspectives and the learners move away from their uncritical nonreflective view of the world toward one with more meaning (Mezirow, 1991). As a guide during the interview process, the model was useful in identifying the experiences and influences in the lives of the participants, exposing the idea of an intergenerational transformational learning process which connected to the notion of how these African American women learned and realized their potential.

Literature relating to social mobility discusses a variety of factors or attributes that African American women employ to overcome adversity. Studies addressing the transformative learning of African American women who overcame the poverty cycle and achieved upward mobility are not complete in the assessment of the process through which an individual changes her perspective (Boyd, 1993; McAdoo, 1988; Peterson, 1992; Scott, K., 1991; Scott, P., 1982). Thus, further research was warranted to examine the transformative learning constructs or pivotal influences that motivated them from the perspective of race, gender, domination, and subordination to illustrate and understand the process of moving beyond barriers of welfare and poverty.

Purpose of the Study

The intent of this study was to look at the early life experiences considered as pivotal influences in motivating African American women from lower socioeconomic backgrounds to achieve higher degrees of upward mobility. As a subset of a larger population of interest (people who grew up in impoverished conditions), being socialized or trapped in the welfare system and other conditions of poverty is more salient with African American women because of additional barriers that have made it difficult for some to do otherwise. There was not an assumption that the participants had faced a transformational learning experience, but the study was designed to uncover a process if it did, in fact, occur.

Research Questions

Two primary research questions were formulated to guide the data collection in this study.

1. How has a small selected group of African American women from lower socioeconomic class backgrounds been able to break their particular poverty cycle to become upwardly mobile achievers with respect to the following elements:
   (a) learning to see other potential life paths;
   (b) gaining the capabilities to pursue higher economic rewards; and
   (c) learning to function in different environments that require new social interactions?
2. What is the role of work related experiences in fostering the transition from dependent poverty-based existence to some higher level of functioning?

Method

A multiple-case study design was selected to accomplish the objective of this research. Participants were recruited through informal requests and referrals. Eight women were recruited from an initial pool of twelve potential participants in the Washington, D.C. metropolitan area. Qualifying criteria limited selection to African American women from lower socioeconomic backgrounds who had parents with limited or no education above high school who worked in menial jobs such as domestic labor and low status service oriented positions. Each participant completed a demographic questionnaire that solicited information about their childhood family background, and parent's educational level of achievement and career patterns. Parents had limited education ranging from none to high school, and some women had their family income supplemented by government assistance when in and out of work.

Description of Study Participants The women interviewed were the first of their siblings (number ranged from none to 20 siblings) to achieve significant mobility. The participants were in the age range of 40 to 57. All had earned degrees above the bachelor level. Their professional attainment ranged from government leadership positions, to private industry, to entrepreneurship. Income ranged from $49,000 to $100,000. However, at the time of the interview, none of the participants felt they had reached their maximum level of mobility and were optimistic about their futures.

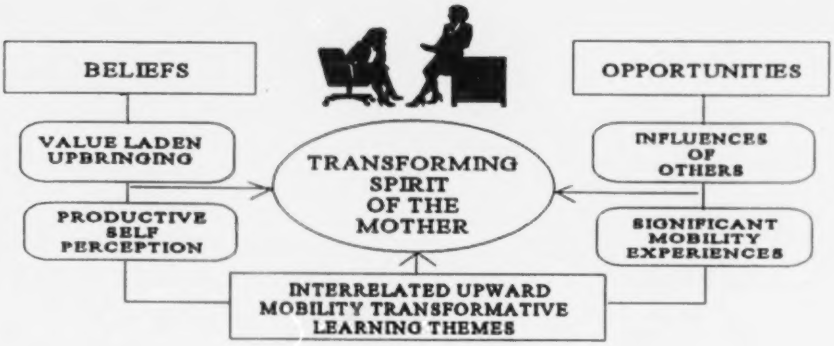
Data Collection The data were gathered through multiple, in-depth individual interviews with participants. Tape recordings of interviews were transcribed and coded using Ethnograph software. These informal interviews were the primary source of data and were presented in descriptive narrative case study profiles. Categories and themes that emerged from the data were extracted from each case in a cross case analysis. Major thematic connections within each of their stories were extrapolated for analysis and interpretation.

Data Analysis A grounded theory approach was used to examine the early life experiences of these women, tracing their journey from impoverished backgrounds to increasingly successful upward mobility. This examination included three aspects of their lives: (a) childhood upbringing, (b) education, and (c) early work experiences. These were posed as significant periods for the participants to reflect upon, up to the point when they perceived that socioeconomic mobility would no longer be a problem.

Results

Two core themes were identified that encompassed four major common themes facilitating a transformation process that led to upward mobility as depicted in Figure 1. Two of the four themes were related to fundamental *beliefs* instilled at an early age: a value-laden upbringing and productive self-perception. The remaining two themes related to specific *opportunities* that affected their lives in meaningful ways: influences from others and significant experiences crucial to mobility. The message of beliefs and opportunities embraced by the women in this study piloted them to a more productive and upwardly mobile future. Results are summarized under the discussion questions.

Figure 1. Intergenerational Transformational Interrelated Upward Mobility Themes


BELIEFS
OPPORTUNITIES
VALUE LADEN UPBRINGING
PRODUCTIVE SELF PERCEPTION
TRANSFORMING SPIRIT OF THE MOTHER
INFLUENCES OF OTHERS
SIGNIFICANT MOBILITY EXPERIENCES
INTERRELATED UPWARD MOBILITY TRANSFORMATIVE LEARNING THEMES

Research Question One How has a small selected group of African American women from lower socioeconomic class backgrounds been able to break their particular poverty cycle to become upwardly mobile achievers with respect to the following elements: learning to see other potential life paths; gaining the capabilities to pursue higher economic rewards; and learning to function in different environments that require new social interactions? A combination of interdependent factors (life long values, self-perception, influences, and experiences) influenced these African American women to move beyond the barriers of their youth and achieve mobility.

Other Life Paths. Two key factors under the belief concept were a *value laden upbringing* and a *productive self-perception.* Whether given by their mother, grandmother, or surrogate mother, it was their early childhood value-laden foundation that brought comfort and resolution in their lives, during periods of adversity. As one participant stated, "It takes a whole village to raise a child and that is how I grew up." Value laden upbringing focused on basic lifelong values, spirituality, morals, work ethics, and educational achievements. This would allow them to maintain their goal-driven purpose.

The development of an individual's self-perception begins to form in their early life experiences, risks, and responsibilities. For the participants in this study, becoming responsible early in their life and encountering different experiences and meeting different people has a positive impact on their self-perception. As a participant was told by her mother, " . . . as long as you had some sense of direction, you will keep yourself on track." Another participant stated that "I never felt the external environment would control what I was able to do with my life." The focus was on developing a positive self esteem, an internal locus of control, a sense of purpose, and goal driven behaviors. As one participant surmised, "We knew certain goals were aspired to us, the value of education, family, manners, and honesty." This message of beliefs embraced by the African American women in this study piloted them to a more productive and upwardly mobile future.

Pursuing Higher Economic Rewards. Another theme that emerged was *opportunities*, and like *beliefs*, it represents the pivotal influences and enlightening experiences which were critical links in the lives of these upwardly mobile African American women. The diversity of social mobility experiences was focused on the *influences of others* and *significant mobility experiences* which shaped the lives of the women in this study.

Family members, friends, teachers, and others of influence may prompt an individual as they shape how that individual will think of herself and her life chances (Chafe, 1977; Boyd, 1993). All of the participants discussed how the influence of others was a motivating factor in their lives. "People who made changes or made me want to change were teachers, neighbors with their encouraging words," stated one participant. Another said, "The more encouragement I received . . . the more successful I wanted to become." Positive role models, support networks, early influences, negative role models, and maternal influences were significant factors that led to upward socioeconomic mobility for this select group of women. The message they conveyed was that of being responsible for your life and the choices you make.

Significant mobility experiences were identified as adverse self-inflicted, adverse non self-inflicted, positive fortuitous, positively intentionally designed, and coping. As the data revealed, whether the experience directly involved the study participants or took place in another contexts, the outcome of such an event was causal to their decision to take action that was conducive to positive gains. For example, one participant was the 21st born of 21 children and she described her siblings negative experiences in life as reinforcing in the direction her life took. She spoke of the consequence of the limitations that most of her siblings experienced. She said,

> Some of them didn't have good lives . . . there was spousal abuse . . . and as a result of this, I made up in my mind, and I am certain that it was from the first grade forward, that because my mother had told me that education was the way to have a better life . . . that my life would be different.

The experiences of these women were unique to them. However, the outcome was the same. They had the beliefs and the opportunities to move beyond their poverty existence. As one participant was told, "You have a mind of your own, use it." Participants experienced both setbacks and advances. It was this diversity of experience that they considered significant in their desire to achieve. The adversity themes reveal that, despite their present condition, situation, or experience, it did not deter the study participants from reevaluating their priorities and staying focused on their goals. Often these experiences were the turning point in the participant's lives and reinforced their beliefs, and their drive to achieve a better life. Gaining the capabilities to pursue higher economic areas and learning to function in new environments that required new social interaction was conveyed. They reflected the learning that transformed their lives in their self-told stories--stories that painted a picture of the influential guidance and leadership of mothers, grandmothers; siblings; surrogates; role models; and others in the schools; churches; communities; work; and the opportunities that resulted because of the interpersonal and interdependent connections. Their mothers encouraged the participant's to excel and this continued with teachers and other role models.

New Social Interactions. These participants were motivated by exposure to different environments. Through exposure to economically and culturally diverse environments, they were motivated to do better with their lives. Early exposure gained by being in contact with people in higher socioeconomic levels or by moving to a diverse area helped them cope and compete for better opportunities. One woman said that, "A lot of the things I could attain as an African American woman depended on me." Another believed " . . . that exposure made[her] realize that there was so much more in life and if prepared opportunities would increase. . ." Both negative and positive experiences helped rather than hinder these participants' abilities to move beyond their existing barriers.

Research Question Two What is the role of work related experiences in fostering the transition from dependent poverty-based existence to some higher level of functioning? The most common actions that the women took that helped them in their transition were learning coping behaviors, being persistent, and accepting support. To persevere challenges or discriminatory behaviors in the workplace, participants learned coping skills. One participant explained that she takes the focus off herself and gives her service to others. She said:

> What I did to offset that, I just reached out to the people that were around me and motivated people. I began to motivate others, and I began to give of myself separate and apart from what they were giving me. It's a strange paradox about some of us that when we are most suppressed and most kept back, we begin to give. We begin to give of ourselves.

Moving from a menial job to a more meaningful one was not an easy task. However, persistence paid off for the women in pursuit of more meaningful and financially rewarding work. Several participants received the support of their co-workers and supervisors, particularly from African American females. Several women seized opportunities to work outside their clerical responsibilities, creating opportunities to move into professional management level positions. One participant said that her efforts forged a better future for her, particularly since she was without a degree in her early career. Besides her ability to influence others, she gave credit to her superiors in the work environment who helped her persevere through the multitudes of obstacles (e.g., racial discrimination, railroaded to service oriented positions, low wages) she faced. Taking advantage of educational opportunities while working helped most of the participants' transition from a life of dependency. This also exposed them to other successful African American women and role models. A participant describes her experience in the following way:

> That's when I really found out about being an African American woman. What is the world like for you? What are the challenges out there? That really instilled in me that our strengths and all the things African American women have done, can do. It really helped me for coming out to the work environment.

Additionally, moving beyond barriers such as age, communication, and overt racism made them stronger and more determined to fulfill their goals and for one woman, " . . . become my own boss. . . ." The obstacles that these women faced were consistent with previous research (Boyd, 1993; Chafe, 1997; Chellis, 1992, Crawford, 1992; McAdoo, 1988, Nobles, 1988; Peterson, 1992; Scott, 1982; Thompson, 1986; Wider Opportunities for Women, 1990). Despite the types of workplace experiences, when the women faced challenges outside their control they never failed to remain focused on their purpose and that was to move out of a life of poverty that others thought was the fate of all who are born into that class (Thompson, 1986). To advance both professionally and academically, these women learned that they had to create and seize opportunities, and use their coping skills to manage barriers that slowed their progression. An additional finding is summarized below.

Breaking The Poverty Cycle A significant finding of the study is an intergenerational transformational learning process that began with the previous generation. Only a partial experience of transformational learning was seen from these women, the final part. A strong maternal influence led to the indoctrination of lifelong values and beliefs, consistent with a process in which mothers and grandmothers had begun but were unable to complete. This intergenerational transformative learning process passed down to the next generation which led to upward socioeconomic mobility and a decline of the poverty cycle in each of their lives. The direct impact from this is they began to see that their preconceived notions of limited opportunities were based on situational or environmental circumstances and not based on their potential. From the findings, a model was developed consisting of the four interrelated themes related to achievement of mobility, each necessary but not sufficient for the process to complete.

Combinations of interdependent factors influenced these African American women to move beyond their existing poverty and achieve socioeconomic mobility. A transformative learning theme forming the early foundation of inculcated beliefs and opportunities taught the participants how to move forward. These beliefs and opportunities that the participants' embraced were predominantly received from the mother or another maternal influence. As the primary sphere of influence, their foundation of principles and beliefs ignited the desire in these women to become someone special. All of the participants received support, encouragement, praise, opportunities for growth, and ongoing feedback through these figureheads The feedback given suggests that the maternal figures, mentors, teachers, and employers exposed the women to other alternatives and potential paths to success.

The mothers conveyed a message of opportunity and responsibility. Each participant recognized through their influences, particularly their mothers, the significance of becoming responsible for their life and the choices they made. Thus, with early preparation and exposure, they began to develop a sense of self-control and the need to become responsible for their future success. There was an increase in competency that resulted from influences and opportunities they experienced in both familial and social contexts.

Conclusions

Given the technological, globalization, and second information-age paradigms shifts, the actions taken by organizations will determine their level of competency and resource capabilities to compete in the 21st century. This is essential given the increase of women and minorities in the workplace, government initiatives to get the welfare population back into the workforce, and the shrinkage of the White male population. Many workers available to enter the workforce lack the skills necessary to be productive and efficient workers. Consequently, employers and HRD practitioners will be mandated to set up new policies and procedures for hiring people from this population. Some will be entering the job market for the first time. Also, they must create an atmosphere that will promote an organizational culture conducive of maximizing the potential this population to remain competitive. Rather than emphasize "deficits in women" living under poverty stricken conditions, emphasis should be placed upon the deficits existing in organizations (Piotrkowski and Kessler-Sklar, 1996). Organizations should design experiences to raise the competency and commitment level plus instill in dependents from poverty-based existence a desire to become independent and active participants in their socioeconomic mobility. Work experiences should lead to desires and expectations of a different future. This reality can come, as it was with the study participants, from early preparation, by the organization through changes in their policies, recruitment standards and procedures to train, educate, and develop workers upon entry into the workplace. Learning experiences designed to increase motivation, self-esteem, and guiding this special population through the change is paramount to the transition. Setting up new policies and procedures for this special population would be the beginning of the workplace transformational learning process--the foundation of guiding principles that could contribute to ending dependent poverty-based existence for women and other minorities.

In this research, the expectation of others and their desire to achieve became the driving force behind the participants' ability to experience upward mobility. An interdependence of organizational beliefs and values; socioeconomic mobility experiences; influences of others with respect to co-workers, peers, supervisors; and a productive self-perspective, are all critical aspects of the transformation process that could ultimately lead welfare poverty-based dependent recipients to active independent, and motivated achievers exercising control over their socioeconomic mobility. The process would address these elements: (1) early preparation and mother's influence, (2) locus of control and self-perception, (3) reflective insight and transitional experiences (turning point), (4) refocus and reaffirm prior goals, (5) ongoing reinforcement, encouragement, support, praise, (6) setbacks and delayed gratification, (7) back to basics (revisit early foundation of principles and purpose), (8) internal and external motivation, and (9) the results and benefits (consequences). For work related experiences, there must be in place purposeful, goal-oriented strategies to prepare this population with more rewarding future opportunities that could advance their socioeconomic status as working adults. The consequences of their action and interactional strategies taken create experiences where they can realize socioeconomic mobility.

Implications and Recommendations

Tavris (1992) suggest that " . . . the way we label and explain our problem is important because the explanation that women choose to account for their difficulties lead to different courses of action" (p. 128). Equally important is the knowledge gained from the experiences of other women that might provide a vision of past and future possibilities. Many women and minorities, particularly African American women, remain on welfare and in abject poverty. Hearing the experiences of other women could possibly raise their level of self-esteem to the extent that they may believe more strongly in themselves and their ability to achieve success. The findings provide insight into the background of African American women, in which the transformative learning process enabled them to surpass their welfare status and other levels of poverty and the process by which they experienced a transformation.

This study represents an examination of transformative learning as it applies, in particular, to the early life experiences of African American women who achieved mobility despite their circumstances. It addresses the issue of how women approach impoverished conditions and their individual process of changing their life's circumstances. It gives a description for how their success accounts for a change in their world perspective in which they realized the possibility of being able to achieve a higher standard of living beyond that of their youth.

From an HRD perspective, this research informs practice by identifying issues and suggesting interventions that can be used while working with people to promote their advancement in society. An examination of women and other minorities growing out of poverty addresses issues relative to the welfare reform initiative. With the current government's plan, most people on welfare will be denied benefits after a period of two years unless they are actively seeking employment. Two to three years after the employment seeking opportunity, they will be denied benefits altogether. To help this population enter the workforce (some for the first time) the government will give employers a tax credit for employees that they have hired off welfare and who remain employed for at least one year. It would be to their advantage here to help employees become productive members of their workforce through the establishment of organizational policies. The policies would specifically address the behavioral skills, knowledge, and attitude needs of this population to increase the possibility of them becoming lifelong productive and committed employees in the workplace. Organizations should address any identified barriers to these workers and strategically plan to eliminate them. All of the participants experienced this process of mobility and transformation despite the character of poverty experienced. How the welfare cycle can be broken, from a learning perspective, makes this study informative. It is important for organizations and HRD from a policy perspective given the: shrinking labor force, government tax incentive to employers, people who are convinced they are not employable, and next generation of family/friendly workplace which is causing some positive notoriety with organizations that have good policies related to family.

Programs that increase the awareness of barriers and lack of initiative are just as important as having policies and procedures in place that create avenues of change. According to Vobejda (1996), many welfare recipients will encounter difficulties transitioning into the workforce as the new welfare-to-work law forces this population back to work. Policies designed to assists both the employee and organization to persevere during these challenges may offer a more promising means of entry into the workforce and maintaining employment. The role of organizations in initiating policies and procedures that address expected difficulties of this new population to the workforce may be a starting point to their entry and subsequent success. With government initiatives that have the potential to change this growing underclass of women and other minorities, these initiatives may be the minimal requisite level of economic opportunities that this population needs to succeed. Organizations may find an advantage in developing policies in fostering improvement in the pool of available employees such as poverty-based welfare dependents.

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The Essential Competencies for Internal and External OD Consultants: Present and Future

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Competencies essential for organization development consultants, internal and external, have evolved over 20 years based on literature and feedback from nearly 2,000 practitioners and academics. Participants will provide input into an 18th revision in small groups, in conjunction with other professional organizations, before a "final" revision is put on the Web for world-wide feedback. Small groups will also create a list of competencies needed in five years. This will be a highly interactive session.

While organization development (OD) has become a key component of most definitions of human resource development (see, for example, McLagan, 1989), it is still a relatively new professional field. While Cummings and Worley (1993) trace the roots of OD back to the 1930s, it is generally agreed that the first use of the term "organization development" occurred in the early 1960s. Its place of prominence was assured with the successful Addison-Wesley series of texts in the Organization Development series in 1969.

The only existing certification process in organization development (The Organization Development Institute) (Cole, 1997) is a paper-and-pencil test rather than competency-based. Further, the certification (Registered Organization Development Consultant, RODC) is not widely recognized and required for employment. As a result, until the growth of academic programs in OD, beginning in the early 1980s, there was no widespread demand for competencies. With the rapid growth of academic programs, however, and the increasing demand for integrity in the field, the need for widely-accepted competencies has become increasingly important.

Problem Statement

The questions for research, then, becomes: What competencies are essential for internal and external organization development consultants today? five years from now?

Review of Literature

Few comprehensive, well-structured, and adequately sampled studies of organization development competencies are present in the literature. Studies reported in the literature tend to focus on narrow groups of change agents (e.g., U.S. Navy) and single countries (most often, in literature available to the author, in the United States). The focus has been on personality characteristics and behaviors applicable to specific interventions, using small numbers of respondents purposively selected, as in McLagan (1989).

Hamilton (1988) explored the relationship between personality characteristics and behavioral tendencies of "effective" organization development consultants among 105 OD consultants within the U.S. Navy. A 360-degree instrument was used to gather information about effectiveness from peers (consulting team members) and supervisors. While some personality characteristics were identified as being "more effective," the design, reliabilities, and reliance on

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personality traits, with all of the problems associated with their use, diminish the value of this study in contributing toward competencies for OD consultants. However, the literature review was very useful. A review of almost fifty articles on "effective consultant personality characteristics and behaviors" led Hamilton (1988) to the conclusion that

> few articles were found that systematically and empirically assessed the personality characteristics or skills that would predict successful consulting efforts and successful consultants. Much of the literature, however, expressed *opinions* as to the requisite characteristics of effective consultants. These opinions were based either on personal experience, a survey of the consultants in the field, or on theory. (pp. 39-40)

She then went on to conclude from this literature review that effective consultants met characteristics in three categories: "(1) openness and responsiveness to others' needs and concerns, (2) comfort with ambiguity and the ability to make sense of it, and (3) comfort with oneself in relation to others" (p. 40).

Hamilton's assessment of the nature of the literature in the field reflects a clear bias toward positivism with a negation of other ways of knowing. This is an interesting perspective, given the commitment of OD toward the understanding of one's "beliefs, values, and attitudes" (Bennis, 1969, p. 2). The research reported and proposed in this paper follows a process more consistent with interpretive research.

One of the early comprehensive lists was developed by Carey and Varney (1983). An interesting aspect of this list is that it contained both present and future competencies. However, the article containing the list contained no description of how the list was developed. Presumably, the list was created from personal experiences and knowledge of the literature. While useful at the time, the list is less useful today because of the sixteen years that have lapsed.

Another extensive literature review (Spencer & Cullen, 1978) identified four categories describing effective change agents: (1) rapport-building skills; (2) diagnostic skills; (3) influence skills; and (4) administrative/managerial skills. As did Hamilton (1988), Spencer & Cullen (1978) presented an extensive table categorizing the extant literature into these four categories, listing the specific competencies identified by the various authors.

In 1983, the Organization Development Division of the American Society for Training and Development created an "Organization Development Practitioner Self-Assessment Guide" that included a list of competencies within four phases of "action research," the "foundation of most OD interventions" (Rothwell, Sullivan, & McLean, 1995, p. 51):

> Entry: Establishing, developing and contracting for the scope of the planned effort, roles, and relationship with the client system. Assessment: Obtaining information and processing it in order to diagnose the organization and identify areas in need of change. Planning: Examining alternative means of accomplishing the goals of the intervention and developing specific strategies for action. Implementation: Putting plans into practice and managing the intervention process. Evaluation: Gathering and analyzing information about the intervention in order to assess the effects of the change effort. (p. 1)

Within each phase, eight categories are listed, followed by specific sub-competencies based on the phase: Possesses strong self-concept, Develops common understanding, Uses personal influence effectively, Applies functional knowledge, Uses diagnostic skills, Formulates workable strategies, Implements strategies effectively, and Focuses on results. This list was developed based primarily on "extensive research conducted by McBer and Company for the U.S. Army Organization Effectiveness Center and School for developing their O.D.E. practitioners" (p. 1).

Other important studies that contributed to the list development early in the process included Burke (1982), Lippitt and Lippitt (1978), Steele (1982), Varney (1981), and Warrick and Donovan (1979). Two additional studies have particular relevance at the present time. Wigglesworth (1995) proposed six categories of competencies for OD professionals practicing internationally: "Linking skills, Self-awareness, Understanding of others, Interactive skills, Tolerance of ambiguity, and Persistence" (p. 424). Eisen, Steele, and Cherbeneau (1995) explored trends affecting organization development and suggested competencies needed by OD professionals in order to respond appropriately in the future to these emerging trends. The themes identified included: broadened frameworks in a global environment, clients and clients' issues, cultural and demographic diversity and change, values and ethics, and trends within OD. Twenty-eight competencies were developed within these five themes.

While the literature was helpful in developing the beginning list, and has been used in modifying the list, the list is being heavily influenced by the methodology described next.

Methodology

Now in its 17th Revision, the Organization Development Professional Competencies list (an earlier version was published in Rothwell, Sullivan, & McLean, 1995), developed by a sub-committee of The OD Institute (co-chaired by Roland Sullivan, Gary McLean, and Kristine Sullivan) is ready to move to a "final" version. From 1977 to the present, over 2,000 practitioners and change management academicians from around the world have offered input into the development of this list. Extensive literature reviews have also been carried out. The most recent revisions were based on input received at the 13th International O.D. Congress in Monterrey, Mexico; the 1994 National OD Conference in Baltimore, MD; and the Twenty-Fourth Annual Information Exchange of The Organization Development Institute in Lake Geneva, WI. An estimated 1,400 attendees at these three conferences had an opportunity to review and critique the list. Their valuable insights and suggestions have been incorporated into the current version by a committee convened at the University of Minnesota in St. Paul during December, 1994. Each revision has been based on input from professionals and organizations with the intention of continuing the growth of those who espouse continual learning as a part of their skills.

An 18th revision will be undertaken based on the input received during the 1997 Conference of the Academy of Human Resource Development. During an interactive session, participants will review the existing list in small groups, suggesting items to eliminate, reword, and add, along with a rationale. These suggestions will be collected and used as the basis for further refinement in the list. This 18th revision will then become the basis for input from the identified organizations which will follow a similar process.

Thirty or more major professional organizations in human resource development with organization development as a major focus will conduct this next step. Some of the organizations that have already expressed interest in participating include: Academy of Management (Division of Organizational Development and Change), American Society for Quality Control (Human Resource Division), American Society for Training and Development (O.D. Professional Practice Area), Association for Creative Change, Association for Quality and Participation, Gestalt Institute of Cleveland, International Organization Development Association, Mexican Organization Development Network, National Training Laboratories, The O.D. Interorganization Group World-Wide, The O. D. Network of India, Organization Development Network, and, of course, the original sponsor, The Organization Development Institute. A "final" revision will then be posted to the world-wide web to invite feedback on a world-wide basis.

However, the process, to present, has focused entirely on those competencies needed now by OD professionals. Another important perspective is to be forward-looking and anticipate the competencies that will be needed in the future. This session of the AHRD Conference will use newly-emerging large group intervention technology to validate the current list and to generate modifications that will need to be made to that list with a future perspective.

Existing List

The existing list, consisting of 171 statements, are clustered according to the typical phases of the Action Research Model: Phase 1: Entry (Marketing Phase, Initial Contact Phase); Phase 2: Start-Up; Phase 3: Assessment and Feedback; Phase 4: Action/Intervention Planning; Phase 5:

Intervention; Phase 6: Evaluation; Phase 7: Adoption; Phase 8: Separation; and core competencies (Self-Awareness, Other).

The specific tasks are:

Phase 1: Entry

Marketing Phase

1. Convey professional capabilities to prospective clients using minimal O.D. jargon.
2. Identify potential client organizations that are presently undergoing crises or accelerated change or growth.
3. Identify potential client organizations with continuous improvement opportunities.
4. Assess the possibility of a match between the potential client organization's needs and the consultant's capabilities.
5. Assess the possibility of getting a contract with a potential client organization.

Initial Contact Phase:

6. Be (or become) familiar with the basic nature of the prospect's business.
7. Contact the appropriate decision-maker(s).
8. Use the language of the client system.
9. Model behaviors that contribute to developing a trusting relationship.
10. Gather introductory information about the client organization.
11. Determine the client's perception of the problem.
12. Verify a potential match.
13. Mutually identify initial outcomes to be achieved.
14. Elicit concerns about professional capabilities.
15. Articulate to the client OD processes that might be used.
16. Identify the potential outcomes, including anticipated contributions to bottom-line results.
17. Contract with the client for joint responsibility for the work.
18. Identify the process to be used by the client to give feedback to the consultant.
19. Agree on compensation structure.
20. Agree on a billing process.
21. Determine the likelihood of the client paying the fee.
22. Develop a written contract appropriate to the specific client.
23. Help the client find creative ways to fund the work.
24. Agree on the source of necessary resources--human and non-human.

Phase 2: Start-Up

25. Mutually identify the critical success factors.
26. Help clients reflect on their motivations for change.
27. Help clients create a vision of where they want to be relative to their current reality.
28. Identify the organizational structure in the client organization.
29. Identify the formal and informal power in the client organization.
30. Ensure that the desired changes are aligned with the organization's goals and objectives.
31. Develop relationships at all organizational levels.
32. Seek commitment from all affected within the organization.
33. Seek participation from all affected within the organization.
34. Deal effectively with resistance as it surfaces.
35. With the client, define the roles of all participants.
36. With the client, map out an adjustable work plan.

Phase 3: Assessment and Feedback

37. Determine data needs broadly.
38. Use an appropriate mix of data-gathering methods.
39. Establish reliability of data-gathering instruments.
40. Establish validity of data-gathering instruments.
41. Sub-contract for data collection and analysis.
42. Clarify expectations of confidentiality.
43. Clarify expectations of anonymity.
44. Design the assessment to incorporate diverse perspectives.

45. Explain different perspectives of organizational climate rooted in cultural differences.
46. Probe for root causes as issues surface.
47. Document observations accurately.
48. Facilitate the creation of a shared view of the state of the organization.
49. Point out the differences between espoused and actual behaviors.
50. Observe power behavior that affects informal systems.
51. Focus on needed improvements in major systems and processes.
52. Design processes to help large groups surface large quantities of data quickly.
53. Discriminate between useful and non-relevant information.
54. Triangulate data gathered through different approaches (e.g., records, interviews, surveys, instruments).
55. When gathering data, maintain an appropriate balance between completeness and usefulness.
56. Trust the data when a conflict occurs between the data and personal views.
57. Use statistical methods to analyze data.
58. Involve individuals and groups creatively in the interpretation of the data.
59. Compare historical or existing data with current data to determine directionality of change.
60. Compare data among subgroups in the organization.
61. Look for and identify patterns that emerge throughout the data gathering process.
62. Explain how data from different levels of the organization affect one another.
63. Using the data of the organization, determine where the organization is and where it wants to be.
64. Identify the relationships between the formal and informal systems within the organization.
65. Explore hidden causes in order to develop a thorough understanding of the problem.
66. Trace the consequences of specific organizational behaviors as they affect different parts of the organization.
67. Create an understanding of the consequences of retaliation for those people who tell it like it is.
68. Develop a non-threatening atmosphere in which people believe that working with the feedback data will result in beneficial outcomes.
69. Respond to concerns of individuals with compassion and caring.
70. Appreciate diverse cultures and their impact on choices for feedback techniques.
71. Facilitate a healthy group process that encourages free and open dialogue.
72. Facilitate thorough discussion of the data with everyone touched by the implications.
73. Present data in a manner that is valid and actionable.
74. Help the client own the relevant data.
75. Help those who provided the data to understand the purpose and framework for its use.
76. Facilitate an understanding of how the data directly relate to organizational effectiveness.
77. Ensure that all conclusions and propositions are directed toward organization changes that are relevant and feasible.
78. At the appropriate time, focus on the next steps for the client to consider.
79. Plant seeds for appropriate and meaningful interventions that lead to system commitment.
80. Facilitate a visioning process that leads to establishing the next steps for change.

Phase 4: Action/Intervention Planning

81. Help participants co-create a clear vision of the future.
82. Help the client evolve the process for managing the transition.
83. Help the organization take responsibility for implementing change.
84. Facilitate solutions to longstanding problems or recurring/ongoing conflicts.
85. Facilitate a participative decision-making process that critically evaluates the choices of alternative interventions.
86. Help participants brainstorm creative alternatives.

87. Facilitate a review of the intervention(s) to anticipate likely consequences, side effects, and potential gains.
88. Look to long-term strategies.
89. Ensure that there is linkage between the purpose, the activity or intervention, the support from top management, the cost, and other persons and teams in the system.
90. Build support for the implementation of action plans.
91. Help the client determine resource allocations for implementation planning.
92. Clarify all roles, responsibilities, and due dates for all implementation tasks.
93. Co-create a written implementation plan that is concrete, cost-effective, measurable, simple, clear, flexible, results-oriented, and logically-sequenced.
94. Help the organization leverage individual strengths to move toward the vision.
95. Obtain a clear commitment to evaluate outcomes early on.
96. Develop the plan so that buy-in exists at all levels of the client system.
97. Manage resistance effectively, understanding that if there is no resistance, you are probably not facilitating a change process.
98. Help the client to develop a reward system that supports the new, desired state.

Phase 5: Intervention

99. Apply integrated theories, being aware of how organizational dynamics are impacted by what the consultant does.,
100. Sense timing to gain the greatest amount of impact.
101. Help the organization deal with the impact that changes in one part of the system will have on other parts.
102. Maintain patience, especially when working through the issues that are complex or emotionally charged.
103. Stay centered in the present, focusing on the ongoing process.
104. Help the client deal with barriers and resistance as they surface during the change process.
105. Create safety within the organization by planning interventions that are at an appropriate depth, neither too shallow nor too deep.
106. Ensure flexibility of interventions.
107. Use appropriate group and intergroup facilitation skills.
108. Consider a variety of interventions that are adaptable to client needs.

Phase 6: Evaluation

109. Choose an appropriate evaluation method.
110. Establish a feedback system to monitor the change effort continuously.
111. Celebrate progress relative to change goals.
112. Monitor top management responses to the intervention(s) for linkage to next steps.
113. Ensure that the consultant's actual time and cost are in line with original estimates.

Phase 7: Adoption

114. Balance the need to have a plan to guide the change effort with the flexibility to take advantage of events as the change effort unfolds.
115. Link the ongoing change process to both the organizational structure and daily operations.
116. Base changes on business strategy and business needs.
117. Shift the emphasis from project-driven to strategy-driven change.
118. Foster commitment from top management for broad participation to carry on continuous transformation.
119. Mobilize internal resources for ongoing self-direction, self-learning, and self-renewal.
120. Integrate the prototype innovation into the daily activities of the organization.
121. Give special attention to areas in which regression begins to occur.
122. Transfer the OD process to the person or department responsible for OD.
123. Transfer OD skills to a critical mass in the client organization so that the capacity for organizational learning is enhanced.

Phase 8: Separation

124. Gradually wean the client organization away from dependence on the consultant.

125. Recognize when separation is desirable.
126. Initiate open discussion about disengagement.
127. Facilitate discussion with the client regarding the next steps in the change effort.
128. Complete all administrative tasks related to separation.
129. Address and manage psychological issues related to separation.
130. Plan a departure that meets the needs of all involved.
131. Manage own post-separation emotions.
132. Follow up with the client as appropriate after departure.

Core Competencies

Self-Awareness

133. Clarify personal values.
134. Clarify personal boundaries.
135. Increase capacity to perform effectively in an atmosphere of ambiguity.
136. Be aware of the influences of cultural dynamics on interactions with others.
137. Increase personal capacity to perform effectively in the midst of chaos.
138. Know and manage personal biases.
139. Know and manage personal assumptions.
140. Develop mutually trusting relationships with others.
141. Stay focused on the purpose of the consultancy.
142. Learn to recognize and manage personal defensiveness.
143. Solicit feedback from others about your work and your impact on them.
144. Observe impact on others.
145. Recognize when personal feelings have been aroused.
146. Remain physically and mentally healthy while under stress.
147. Resolve ethical issues with integrity.
148. Engage in dialogue with other professionals to develop shared ethical foundations.
149. Avoid getting personal needs met at the expense of the client (i.e., financial, emotional, sexual).
150. Energize others.
151. Use inner power sources for the benefit of the larger universal system.
152. Accept imperfection in self.
153. Accept where the client is.
154. Commit self authentically to clients.

Other Core Competencies

155. Continuously assess the real issues as they surface.
156. Collaborate with internal/external OD professionals.
157. Balance the needs of multiple relationships.
158. Work within the limits of your capabilities.
159. Communicate implications of systems theory.
160. Listen to others.
161. Pay attention to the spontaneous and informal.
162. Consistently maintain confidentiality.
163. Continuously improve your interpersonal skills.
164. Use the latest technology effectively.
165. Interpret cross-cultural influences in a helpful manner.
166. Utilize a solid conceptual framework based on research.
167. Embrace positive paradigm changes.
168. Implement interventions appropriate to your own skill level and the organization's readiness.
169. Use humor creatively and effectively.
170. Handle diversity and diverse situations skillfully.
171. Communicate directions clearly to groups.

Conclusion

In a changing world, any attempt at providing a "final" competency list will be futile. However, it is important, as well, to have some stability, especially in a rapidly changing world. The methodology described herein, and the process in which conference attendees will participate, will make a strong contribution to the growth and development of programs and individuals within organization development, now and in the future.

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Factors Affecting Transfer of Training in an Industrial Setting

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This study defined and developed measures and tested the impact of a number of transfer of training variables on the performance ratings of operators in a large petrochemical manufacturing facility. Results of a hierarchical regression showed that a set of seven transfer climate variables were the largest contributors to the prediction of performance. Training content validity and three interpersonal transfer climate variables (peer support, change resistance, and supervisor sanctions) emerged as significant predictors of performance ratings. The findings suggest the value of comprehensive, integrated models and partially validate one such theoretical model.

The present level of knowledge with regard to the dynamics of the training transfer process is limited. Research examining the role of work environment factors in training transfer was virtually non-existent prior to 1980. Since that time the importance of situational constraints/facilitators such as appropriate tools and equipment or job-related information has been fairly well established (Kozlowski & Hults, 1987; Peters, O'Connor, & Eulberg, 1985). Considerably less is known about the role of transfer climate despite the presence of these variables in nearly all training environments.

A comprehensive review of research literature pertaining to training transfer (Bates, 1997) revealed several core areas in which transfer research is still deficient. First, despite increasing research directed at a range of factors affecting transfer, critical dimensions of the transfer equation have not yet been adequately defined. For example, overlooked areas include: training content validity (Salomon & Perkins, 1989); job attitudes such as job involvement (Noe & Schmitt, 1986) and organizational commitment (Larson & Fukami, 1984); and pre-training motivation (Baldwin, Magjuka, & Loher, 1991; Tannenbaum et al., 1991).

Second, a number of researchers have recognized the necessity of building comprehensive, integrated models of the training process in order to fully understand and reliably identify the causes and effects of training success or failure (Holton, 1996; Rouiller & Goldstein, 1993; Tracy, Tannenbaum, & Kavanaugh, 1995; Xiao, 1996). Unfortunately, very limited research has been done with these models and none have been validated by further research. Thus, transfer research lacks an accepted theoretical framework for evaluating these factors together in context.

Third, transfer constructs must be made validly and reliably measurable. The tendency toward custom designed scales for each study typical of much of the transfer research makes generalization of findings across studies questionable and conclusions about the latent construct structure of important transfer of training variables difficult. Some of the scales used in previous research, particularly single item measures, also have questionable psychometric qualities. Not surprisingly, studies in which such measures have been used often yielded different conclusions about predictor-outcome relationships than had previously been found.

The purpose of this study was to investigate factors affecting transfer of computer-based training in an industrial setting. More specifically, it addressed missing elements in previous research by investigating the role of transfer of training climate and specific training design variables, job attitudes, and motivational elements in the transfer of training process. The study provides a partial test of a theoretical model of training effectiveness in an attempt to measure and explain training transfer. Accepted scale development procedures, including factor analysis, were used in an effort to develop more valid and reliable scales of the constructs of interest.

Eleven specific hypotheses were investigated to address two general research questions (shortened here for space reasons):

> *Research Question 1:* What are the correlations between the independent transfer variables, and between the independent and dependent transfer variables in this study?

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Research Question 2: What proportion of the variance in performance is explained by five sets of these variables?

Theoretical Background for the Study

The conceptual model framing data analysis in this study (see Figure 1) was drawn from the integrated evaluation research and measurement model proposed by Holton (1996). This model was developed by examining relationships and constructs from previous empirical research and integrating the findings into a theoretical framework proposed by Noe (1986) and consistent with Baldwin and Ford's (1988) transfer process model. Holton's model described an individual's training related behavior as a function of ability/enabling elements (e.g., ability, transfer design), environmental elements (e.g., reaction to training, transfer climate, external events), motivational elements (e.g., motivation to learn or transfer, expected return on investment), and secondary influences such as job attitudes or personality characteristics. A specific subset of the elements suggested by Holton's model was examined in this study with the addition of a training design variable (content validity).

As shown in Figure 1, 12 independent variables were examined. These variables included an ability/enabling element, transfer design, a construct which reflects the degree to which transfer mechanisms are a part of the training design. Environmental elements were represented by a transfer climate construct which contained seven variables, four positive climate variables (supervisory support, opportunity to use, peer support, and positive personal outcomes) and three negative climate variables (negative personal outcomes, change resistance, and supervisor sanctions). Secondary influences on training effectiveness included organizational commitment and training content validity. Motivational elements were represented by performance utility, a construct which measured two components of motivation to transfer, perceived utility and intent to use. Learning on computer-based exams (a training outcome variable) was also examined as an independent variable. The dependent variable in this study was supervisory ratings of operator performance.

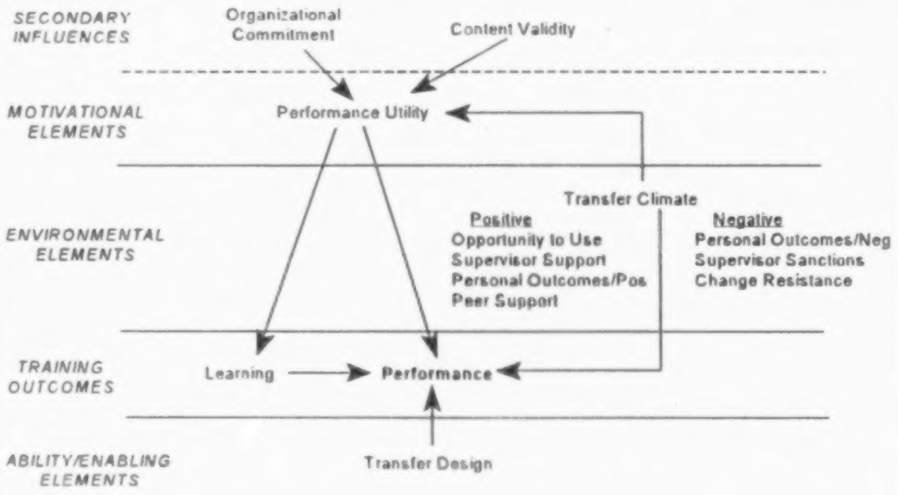
SECONDARY INFLUENCES
Organizational Commitment
Content Validity
MOTIVATIONAL ELEMENTS
Performance Utility
ENVIRONMENTAL ELEMENTS
Transfer Climate
Positive
Opportunity to Use
Supervisor Support
Personal Outcomes/Pos
Peer Support
Negative
Personal Outcomes/Neg
Supervisor Sanctions
Change Resistance
TRAINING OUTCOMES
Learning
Performance
ABILITY/ENABLING ELEMENTS
Transfer Design

Figure 1: A Conceptual Model of Transfer

Method

This cross-sectional study was part of a bigger study undertaken to evaluate a large scale computer-based training system project, the Computer-Aided Training System (CATS) project. The goal of the CATS project was the implementation of a computer-based training (CBT) system designed to meet the training needs of a Fortune 500 size petrochemical producer in southern Louisiana.

Sample Subjects in this study were 73 production operators from two continuous production units involved in the manufacture of highly hazardous chemical products. Production operators in both units were responsible for monitoring, operating, and maintaining production related equipment such as reactors, filters, grinders, process analyzers, piping, valves, pressure gauges, flow meters, and a computerized process control board. Operators were required to undergo training and certification on 30 to over 100 training modules depending on their job responsibilities by May 15, 1995. Following the completion of training in May, 1995, the data collection instruments used in this study were administered.

Measures of Independent Variables Data were collected using a number of questionnaire instruments in addition to computer-based exam scores. The instruments used consisted of either established construct scales (e.g., organizational commitment) or new construct scales developed by the researchers. For all instruments, data from a larger sample of respondents were used to conduct exploratory common factor analyses in order to identify the latent construct structure for the population under study. Common factor analysis was used because it is considered more appropriate than principle component analysis when the objective is the identification of latent structures (Nunnally & Bernstein, 1994). Oblique rotation was employed in light of its suitability for latent variable investigation when latent variables may or may not be orthogonal (Hair, Anderson, Tatham, & Black, 1995). The initial criteria used to determine the number of factors to retain was an eigenvalue greater than or equal to one. However, when exploratory common factor analysis is used for theory building, the eigenvalue equal to one criteria for determining the number of factors to retain may not be completely correct. Unlike principal components analysis, the proportion of variance accounted for is not as important as identifying the latent structure of the data (Hair, et al., 1995). Therefore additional analyses were conducted to evaluate alternate structures with fewer and more factors retained. The most interpretable structure was then selected.

Measure of Dependent Variables The dependent variable used in this study was supervisory ratings of operator performance. This measure was based on supervisors' judgements of the percentage of time operators performed each procedure in a subset of approximately 20 critical procedures 100% correctly. Inadequate criterion measures has been identified as a weakness of transfer studies (Bates, 1997; May, 1997) so a complex seven-step development and implementation process was designed for this measure. Several factors underlie the use of this complex criterion measurement methodology. First, it was necessary to identify and use information relating to the performance of highly critical procedures because this information was of greatest value to the organization. Second, it was assumed that performance ratings of subordinates on procedures that the supervisors observed most frequently would be more accurate than ratings on procedures less frequently observed. Finally, the elaborate development process helped insure the content validity of the criterion measure.

The seven steps were:

1) Procedure Identification. A comprehensive of list of operating procedures is identified and collected for each production unit participating in the study.

2) Identification of Selection Criteria. Based on input from subject matter experts, three general selection criteria were used to identify critical procedures: (a) The procedure must be tied to an observable behavior; (b) the procedure must be performed either every 12 hour shift, every three day shift cycle, or at least once a month; and (c) the procedure must be critical to unit performance in terms of either safety, quality, or production rates.

3) Identification of Critical Procedures. A sample of approximately 50 highly critical procedures was selected and validated for each production unit and subunit. This process involved the use of an instrument asking supervisors to list the most critical procedures in their unit, identify which criteria make the procedure critical (e.g., safety, quality, productivity), and to specify how frequently the procedure is used. The resulting lists were cross-checked and validated by subject matter experts.

4) Frequency Rating. The relative frequency with which supervisors were able to directly observe operator performance of each procedure on the critical procedures list was obtained using a questionnaire instrument. From each unit or sub-unit, the subset of procedures rated as the most frequently observed was determined by ranking the simple mean ratings of the frequency of observation of each procedure.

5) Final List of Critical Procedures. The 20 critical procedures with the highest mean ratings of observation frequency were chosen as the final subset of critical procedures for which performance ratings were collected.

6) Development of the Performance Rating Instrument. A performance rating instrument was developed to obtain supervisors' judgements of the percentage of time that operators performed each procedure in the set of critical procedures correctly. The instrument consisted of a five point Likert-type scale reflecting judgements about the percentage of time that supervisors observed procedures being performed correctly by individual operators. The scale ranged from (0) none of the time, (1) about 25% of the time, (2) about 50% of the time, (3) about 75% of the time, to (4) 100% of the time.

7) Performance Rating. Supervisors were given ten days to complete a performance rating instrument for each of their subordinates.

Analysis Bivariate correlation analysis was used to test predictions about expected associations between independent variables and between independent variables and the dependent variable.

Hierarchical regression analysis was used to examine how the variance in performance ratings was partitioned among predictors and to test predictions made about the ability of the independent variables to explain the variance in the criterion measure. Independent variables were entered in groups as shown in Table 1, based on the theoretical arrangement shown in Figure 1 (James & Brett, 1984). Although structural equation modeling provides a more powerful test, sample size limitations prevented us from using this methodology. Nevertheless, the current analyses constitutes a first step toward theory validation by simultaneously examining the effect of the variable sets on performance. While such an analysis is only suggestive of causal relationships, it builds a foundation for further research.

Findings

Research Question 1: Bivariate correlation analyses indicated that secondary influences on training effectiveness (organizational commitment and content validity) were positively correlated with performance utility. Variations in scale scores on seven transfer climate variables were associated with changes in performance utility in the expected directions. Scores on the opportunity to use, peer support, supervisor support, and positive personal outcomes scales were positively correlated with performance utility. Scores on the negative personal outcomes, change resistance, and supervisor sanctions scales were negatively correlated with performance utility. Learning from computer-based exams was not correlated with either performance utility or with performance ratings and was not a significant contributor to the explained variance in performance ratings.

Correlation analysis of the associations between predictor variables and performance ratings yielded mixed results. Of the predicted correlates of performance, only two transfer climate elements, peer support and supervisor sanctions, were significant with medium range correlations ($r = .24$, $p \leq .05$ and $r = .35$, $p \leq .01$ respectively).

Research Question 2: Hierarchical regression analysis results (see Table 1) indicated that:

1) Organizational commitment, entered first in the hierarchical regression, did not account for a significant proportion of the variance in performance ratings ($R^2 = .004$).

2) After the variance explained by organizational commitment is accounted for, content validity increased the proportion of explained variance to 6.3%. Although this increase approached

significance ($p \le .06$) the model at this stage was not significant.

3) The addition of performance utility to the model increased explained variance .7%, a non-significant increase. The total variance explained by the model at this stage, with organizational commitment, content validity, and performance utility as predictors, reached 7% ($R^2 = .07$), also non-significant. However, with the addition of performance utility to the model, the Beta value for content validity became significant ($\beta = .32, p \le .05$).

4) The entry of learning average into the regression model increased total variance explained by a non-significant 8.2%, also non-significant. The Beta value for content validity increased in significance at this stage ($\beta = .44, p \le .05$) and remained significant throughout the remaining regression steps.

5) Transfer design increased total variance explained to 10%, a non-significant increase. Total model variance explained was still not significant.

6) When entered as a set, the seven transfer climate variables increased total variance explained by the model 36% ($p \le .001$), producing a significant model ($F_{12,49} = 3.47, p \le .001$) that explained 46% of the total variance in performance ratings. In the full model, significant Beta values were found for content validity, supervisor sanctions, peer support, and change resistance.

Table 1: Results of the Hierarchical Regression

Step	Variable(s) Entered	R^2 Adj R^2	F (df)	ΔR^2	F (df)	$\beta^{††}$
1	Organizational Commitment	.004 -.013	.233 (1,60)	----	----	-.181
2†	Content Validity	.063 .032	1.99 (2,59)	.059	3.73 (1,62)	.443*
3†	Performance Utility	.07 .022	1.45 (3,58)	.007	.437 (1,58)	.034
4†	Learning Average	.082 .017	1.27 (4,57)	.012	.75 (1,57)	-.117
5†	Transfer Design	.10 .02	1.25 (5,56)	.018	1.13 (1,56)	-.055
6†	Supervisor Sanctions Pos Pers Outcomes Neg Pers Outcomes Change Resistance Peer Support Supervisor Support Opportunity to Use	.46 .327	3.47** (12,49)	.36	4.64** (7,49)	.387* .095 .097 .382* .521* -.032 -.211

† Each successive model in the hierarchical regression analysis includes the variables previously entered.
†† Beta values shown were calculated with all predictors entered in the regression equation.
* $p < .01$ ** $p \le .001$

Conclusions and Discussion

The results of this study make a number of valuable contributions to an understanding of the transfer process. The following brief discussion, organized according to the three core shortcoming of transfer research identified earlier, highlights the most important of these contributions.

Training Transfer Variables First, the study points to several variables that are critical to the transfer process. Using a conceptualization of transfer climate in which climate dimensions were defined by their referent in the organization (see Holton, Bates, & Seyler, in press), this study suggests that transfer climate variables may be among the most powerful influences in the transfer process. In the present setting, interpersonal transfer climate dimensions including peer support, group resistance to change, and supervisor sanctions were all highly significant predictors of performance ratings. The study also suggests that perceived training content validity can be an important force motivating the use of learned KSAs. The results of the hierarchical regression further imply that the relationship between content validity and training outcomes may not be totally mediated by motivational elements. That is, content validity may have a direct relationship with training outcomes by virtue of the inherent performance relevance of highly valid training content.

Transfer Climate As a set, the transfer climate variables were shown to account for a significant proportion ($R^2 = .36$, $p \leq .001$) of the variance in performance ratings. This finding corroborates other research which has shown transfer climate variables as a set to be the single largest contributors to the prediction of performance outcomes from training.

Although a good deal has been written suggesting the value of criterion referenced measures of organizational climate for understanding work behavior, few studies have used a climate construct to examine factors influencing training effectiveness. The present findings place this study alongside less than a handful of other studies (e.g., Rouiller & Goldstein, 1993; Tracy et al., 1995) which have operationalized a transfer climate measure and verified the importance of climate in training transfer. This study therefore makes an important contribution to the growing recognition that specific attributes of the organizational work environment, operationalized as transfer of training climate, are key factors influencing training transfer and training effectiveness.

Interpersonal climate dimensions were among the most powerful predictors of performance in this study. Peer support, group resistance to change and supervisor sanctions all emerged as significant predictors of performance with Beta values of .52, .38, and .39 respectively ($p \leq .01$). It is clear from these results that work group members' belief about themselves as a group, normative expectations about group members' work behavior, and supportive interpersonal relationships were highly influential factors dictating the use of training on the job.

A new group level dimension of transfer climate, change resistance, emerged as a significant predictor of performance in this study. This construct was composed of items that suggested a normative group resistance or acceptance to introducing new learning from training. Change resistance has received very little research attention in the training literature although there are indications that a transfer dimension of this nature may be of some value. A study of transfer reported by Hastings, Sheckley, and Nichols (1995), for example, found that one environmental constraint to transfer was participants' belief that training would disrupt the functioning of current work groups. In addition, conceptually similar constructs such as openness to experience (Barrick & Mount, 1991) at the individual level and continuous learning culture (Tracy et al., 1995) at the organizational level have been shown to be valuable constructs in understanding knowledge acquisition and use.

Content Validity A strong positive association between content validity and performance utility was found suggesting that the job relevance of training content affects transfer motivation. High levels of training content validity were associated with high levels of perceived utility which some researchers (e.g., Noe, 1986) have suggested moderates the relationship between learning and behavior change and is therefore an integral part of motivation to transfer. This finding is consistent with adult learning theory and expectancy theory perspectives.

The results of the hierarchical regression analysis suggest that (a) the relationship between content validity and performance is not totally mediated by performance utility, and (b) content validity may have a direct relationship with performance. These findings further suggest the value of systematic needs analysis prior to training design or, in the case of existing training programs, the potential value of pre-training evaluations of training content.

Performance Utility The correlations between performance utility and the other predictor variables were among the largest effects obtained in this study. Of the 10 variables correlated with performance utility, eight were categorized as large ($r \geq .41$) and two as medium ($r = -.27$ and .33)

Two important conclusions emerge from these correlations. First, the strong positive correlation between performance utility and organizational commitment provides preliminary evidence that organizational commitment may be an important influence on training effectiveness to the extent it predisposes individuals to view training as useful and thus enhances motivation to transfer. This finding is congruent with research demonstrating relatively high correlations between commitment and behavioral intentions (Mathieu & Zajak, 1990; Steele & Ovalle, 1984). Second, the correlations suggest the potential value of expectancy theory as a tool for understanding training transfer. Expectancy theory (Vroom, 1964) predicts that individuals will be more motivated to learn and use training they perceive will lead to desirable performance related outcomes. Therefore variables which are perceived as facilitating attainment of performance related outcomes (e.g., content validity, opportunity to use, peer support, supervisor support, positive personal outcomes) will be positively correlated with performance utility; whereas, variables which are perceived as inhibiting attainment of performance related outcomes (e.g., negative personal outcomes, supervisor sanctions and change resistance) will yield negative correlations.

Transfer Design Transfer design, or the extent to which training is designed to give trainees the ability to transfer learning to the workplace, was the only ability/enabling element examined in this study. The findings of this study imply that one potential shortcoming of CBT as a performance improvement tool is that design dimensions necessary for supporting training transfer may, in some cases, be absent. That is, the simple transfer of classroom instruction to the computer, despite the potential for increased instructional efficiency, does not necessarily indicate that improvements in job performance will result. These issues raise important questions about whether and to what extent the use of computer-based instruction complicates the transfer of training.

Theoretical Model of Transfer The study provides partial support for a conceptual model based on Holton's (1996) comprehensive training evaluation and measurement model. The value of this model in analyzing training program success or failure lies in its ability to provide a framework in which a wide range of training inputs, processes, outputs, and environmental connections can be examined and results interpreted. The present findings demonstrate that understanding the complexity of influences on training effectiveness requires a comprehensive model of training effectiveness, one that is rich enough to account for the system-wide factors which may influence training outcomes. This, together with other research findings, (e.g., Mathieu, Tannenbaum, & Salas, 1992) underscore the necessity for comprehensive, integrated models of the training process in identifying the cause and effect of training success or failure.

Transfer Measurement Issues Extensive scale development conducted for this study resulted in multi-item scales designed to measure number of constructs including peer support, supervisor support, supervisor sanctions, change resistance, positive and negative personal outcomes, opportunity to use training, transfer design, and content validity (Holton, Bates, Seyler & Carvalho, in press). A different conceptual structure for transfer climate was identified from the factor analysis. A partial measure of motivation to transfer (performance utility) also emerged in the factor analyses. Although further testing of these scales in other settings is required to more fully establish their reliability and validity, this study provides a starting point for the definition and refinement of several potentially important transfer variables.

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Development and Validation of a Generalized Learning Transfer Climate Questionnaire: A Preliminary Report

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This study provides a preliminary report on construct validation through common factor analysis of an expanded learning transfer climate instrument. Building on our earlier work, a third generation instrument was developed measuring 16 hypothesized constructs. The Learning Transfer Questionnaire (LTQ) was then administered to 320 employees from a wide range on organizations undergoing an assortment of training. Results indicated that all but one construct is likely to be supported when the sample is enlarged, with the possibility that a few additional constructs will emerge. The instrument development process, preliminary findings, and future research agenda are described.

Investment in training activities aimed at improving employees' job performance represents a huge financial expenditure in the United States. In 1994 an estimated $52.4 billion was spent in direct costs by US employers on formal training (Lakewood Research, 1995). With the inclusion of indirect costs and informal on-the-job training, total expenditure estimates range from $200 - 400 billion annually (Broad & Newstrom, 1992). Of this expenditure, as little as 10% is projected to pay off in performance improvements resulting from the transfer of learned knowledge, skills, and abilities to the job (Baldwin & Ford, 1988). Although the exact amount of transfer is unknown, the transfer problem is believed to be so pervasive that there is rarely a learning-performance situation in which such a problem does not exist (Broad & Newstrom, 1992).

Transfer of training can be defined as the degree to which trainees apply knowledge, skills, behaviors, and attitudes learned in training to their jobs. Transfer of training is traditionally seen as a function of three sets of factors: trainee characteristics, including ability, personality and motivation; training design, including a strong transfer design and appropriate content; and the work environment, including support and opportunity to use (Baldwin & Ford, 1988). Although a good deal of research has been done on design factors (Noe, 1986), significantly less has been done to understand how work environment factors influence transfer of training (Baldwin & Ford, 1988; Tannenbaum & Yukl, 1992).

One conceptualization of the manner in which work environment factors affect the transfer of learning to the job is through a transfer of training climate. Transfer climate is seen as a mediating variable in the relationship between the organizational context and an individual's job attitudes and work behavior. Thus, even when learning occurs in training, the transfer climate may either support or inhibit application of learning on the job (Mathieu, Tannenbaum, & Salas, 1992). Several studies have established that transfer climate can significantly affect an individual's ability and motivation to transfer learning to job performance (Huczynski & Lewis, 1980; Rouiller & Goldstein, 1993; Tracey, Tannenbaum, & Kavanaugh, 1995; Xiao, 1996). Although many authors support the importance of transfer climate, some stating it may even be as important as training itself (Rouiller & Goldstein, 1993), there is still not a clear understanding about what constitutes an organizational transfer climate (Tannenbaum & Yukl, 1992).

These findings point to the need to carefully consider how transfer climate is operationalized and how it can be measured validly and reliably. In recent transfer climate research, a wide variety of instruments have been used with measures ranging from single item scales used to quantify constructs, to multiple item, content validated but situation specific scales. This raises

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several concerns. First, the tendency toward custom designed scales for each study makes generalization of findings across studies questionable and conclusions about the latent construct structure of transfer climate difficult. Second, these studies often do not include factor analyses to validate hypothesized constructs. Third, some of the scales, particularly single item measures, have questionable psychometric qualities. Not surprisingly, different studies have produced a variety of conclusions about the relationship between transfer climate and performance, perhaps because of instrumentation differences.

What is needed, and should be an important research goal for HRD research, is the development of a valid and generalizable set of transfer climate scales. An established set of transfer climate scales with validated constructs and known psychometric qualities would facilitate valid cross-study comparisons and add significantly to our understanding of the transfer process. In addition, it would facilitate transfer research by reducing or eliminating the need for redundant instrument design.

Development of a general transfer climate instrument would not preclude the addition of situation specific scales. Rather, it would provide a foundation of validated constructs with established applicability across populations and settings. Research in organizational behavior, which produced a series of tested and generally accepted job attitude scales, provides a strong example of the value of such a goal.

From a broader perspective, defining and accurately measuring transfer of training climate is important because it helps HRD move beyond the question of whether training works to why training works (Tannenbaum & Yukl, 1992). For example, without controlling for the influence of transfer climate evaluation results are likely to vary considerably and yield erroneous conclusions about the causes of intervention outcomes (Holton, 1996). A valid and reliable measure of transfer climate also has significant diagnostic potential: Such an instrument can be used to identify when an organization is ready for a training intervention and can provide information to guide pretraining interventions aimed at increasing training effectiveness. From a theoretical perspective, identifying and measuring the dimensions of the work context that impact the use of learned skills and behaviors would provide a more complete conceptual framework of training effectiveness.

The purpose of this research was to move toward the goal of a general transfer climate instrument. Earlier research (Holton, Bates, Seyler, & Carvalho, in press), reported on initial attempts to validate the transfer climate constructs and instrument proposed by Rouiller and Goldstein (1993). Significant differences were found in construct structure that led to the conclusion that Rouiller and Goldstein's constructs should not be the basis for a generalized instrument. The Holton et al. study factor analyzed an expanded transfer climate instrument incorporating several unexplored constructs. The nine factor solution that emerged indicated the presence of additional climate constructs and indicated that transfer climate was perceived according to organizational referent.

This study builds on that previous work by expanding the instrument again to include what are believed to be a comprehensive set of constructs affecting the potential for training to transfer to the job. As shown in Figure 1 below, Holton's (1996) proposed evaluation model was used as a conceptual base for this instrument along with the two studies cited above. The primary purpose of this paper is to provide a preliminary report on initial construct validation work using factor analysis. More specifically, it addressed the following research question:

> *Research question*: Will exploratory factor analysis of the Learning Transfer Questionnaire (LTQ) result in an interpretable factor structure of latent transfer climate constructs?

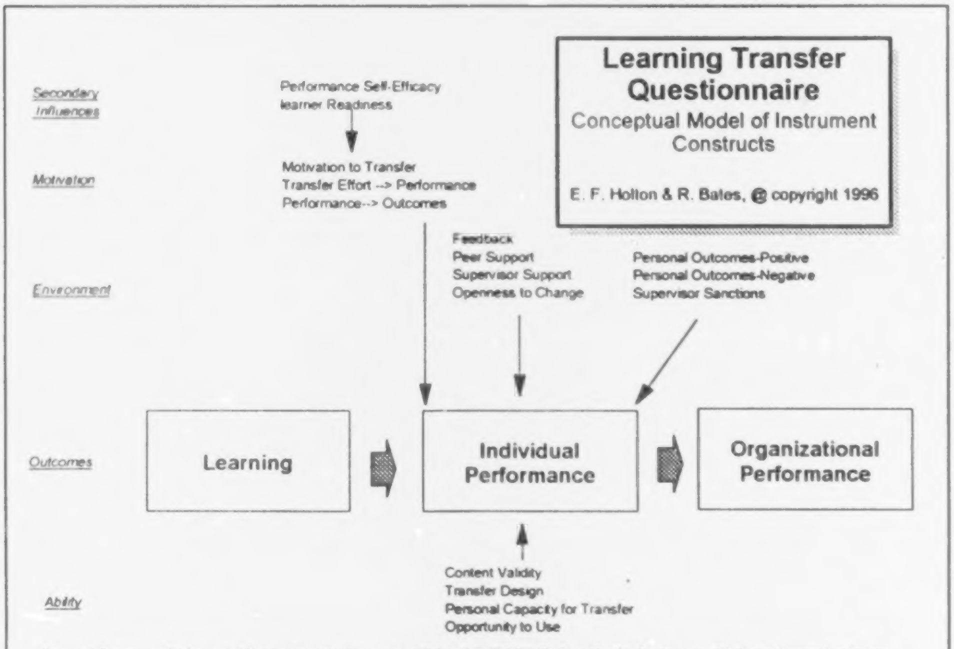
A second purpose is to discuss ongoing development research on this instrument.

Method

Instrument Development A pool of 112 items were generated to represent 16 hypothesized constructs. We began with the 64 item instrument that emerged from our previous work (Holton et al., in press) which had its beginning with the Rouiller and Goldstein(1993) instrument. This instrument had shown initial evidence of content, construct and criterion validity (Bates, Holton, & Seyler, 1997; Seyler, Holton, Bates & Carvalho, 1997).

Because the instrument which emerged had a disproportionate numbers of items across constructs (e.g. 23 items measuring supervisor support), we first reduced the number of items by selecting only the highest loading items from its large scales. Next, we examined the literature to identify other constructs that had not previously been measured. Important additions included constructs such as performance self-efficacy, expectancy related constructs (transfer effort-performance and performance-outcomes), personal capacity for transfer, feedback and general motivation to transfer. We then fit these constructs into the theoretical framework of the HRD Research and Evaluation Model (Holton 1996) as shown in Figure 1.

The items were divided into two sections. For the first section, containing 76 items representing 11 constructs, trainees were asked to consider the specific training program they were attending. The instructions for this section were to "think about this specific training program." Another 36 items, representing 5 constructs, were placed in the second section. Trainees were instructed to "think about training in general in your organization." Constructs in the second section included transfer effort-performance, performance-outcomes, openness to change, performance self-efficacy, and feedback.


Learning Transfer Questionnaire
Conceptual Model of Instrument Constructs
E. F. Holton & R. Bates, © copyright 1996
Secondary Influences
Performance Self-Efficacy
learner Readiness
Motivation
Motivation to Transfer
Transfer Effort --> Performance
Performance--> Outcomes
Feedback
Peer Support
Supervisor Support
Openness to Change
Personal Outcomes-Positive
Personal Outcomes-Negative
Supervisor Sanctions
Environment
Outcomes
Learning
Individual Performance
Organizational Performance
Content Validity
Transfer Design
Personal Capacity for Transfer
Opportunity to Use
Ability

For more information on development of the contructs in this instrument see: Holton, E. F. III (1996) The flawed four-level evaluation model. Human Resource Development Quarterly, vol 7. and Holton, E. F., Bates, R. & Seyler, D. (1996) Construct validation of a transfer climate instrument. In E. Holton (Ed.) Proceedings of the 1996 Academy of Human Resource Development Annual Conference, Austin, TX: Academy of Human Resource Development.

Sample The LTQ was administered to 320 people in a wide variety of organizations and training programs. Because the purpose of this research program was to develop a generalized instrument that can be used across a wide range of training programs and organizations, the sample had been deliberately chosen to be as heterogeneous as possible.

This sample included respondents from a shipping company, power company, chemical manufacturer, municipal government, state government, and open session classes offered to the public. The municipal and state government classes were offered by a central training organization so the classes included representatives from a wide variety of agencies and functions. The open

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session classes consisted of mostly small and mid-sized private sector companies.

A wide range of employees from secretaries to managers and professionals attended the various training sessions. Although the classes covered a variety of training topics including sales, computer skills, leadership, mid-management skills, and supervision, one limitation of this initial study is that is it weighted somewhat more heavily toward management training.

Analysis. Exploratory common factor analysis was used to identify the underlying latent structure of the data. Common factor analysis is more appropriate than principal components analysis when the objective of the analysis is to identify latent structures, rather than for predictive purposes (Nunnally & Bernstein, 1994). An oblique rotation was used because it is also more appropriate for latent variable investigation when latent variables are expected to have some correlation.

Construct validation has traditionally consisted of establishing convergent and divergent validity with other constructs through correlational studies. More recently, factor analysis has been recognized as "a powerful and indispensable method of construct validation (Kerlinger, 1986, p. 427)" that "is at the heart of the measurement of psychological constructs (Nunnally & Bernstein, 1994, p.111)." The combination of common factor analysis with convergent and divergent validity studies results in a more complete construct validation.

The items in the two sections of the instrument represented two distinct construct domains: specific transfer climate and general transfer climate. They were therefore factor analyzed separately with 76 items pertaining to the specific training program in one pool, and 36 items pertaining to general transfer climate in the second pool.

This resulted in a respondent to item ratio of 4.2:1 for specific training items, and 8.9:1 for general climate items. Generally a ratio of between 5:1 to 10:1 is desirable (Hair, Anderson, Tatham, & Black, 1995), though it is not uncommon to find smaller ratios (Ford, MacCallum, & Tait, 1986). We consider this only a preliminary report because larger ratios will be important for a general instrument with wide applicability.

Results

Because this paper is a preliminary report, it is more appropriate to discuss the findings at the construct level and not report item loadings until complete data is available. This study provides initial evidence of viability of this research effort and this specific instrument.

Training Specific Items Kaiser's measure of sampling adequacy (MSA) for the entire data set, a measure of the data set's appropriateness for factor analysis, was .876. Values above .80 are considered appropriate for factor analysis (Hair et al., 1995). Eighteen factors were identified with eigenvalues greater than one. However, examination of the scree plot revealed that the actual number of factors might be 13, close to the 11 hypothesized. Factor structures were exceptionally clean with very minimal cross-loadings.

Table 1 reports evidence of scale viability based on these initial results. Several conclusions are apparent. First, all but one of the hypothesized factors (supervisor barriers) received at least some support. Second, eight scales showed good factor structure, though one of them (motivation to transfer) split into two scales, one containing negative affect items and one positive affect items. Third, two of the scales had only two items loading on the factor and may need additional work.

General Transfer Items Kaiser's measure of sampling adequacy (MSA) for the entire data set, a measure of the data set's appropriateness for factor analysis, was .878. Eight factors were identified with eigenvalues greater than one. However, examination of the scree plot revealed that the actual number of factors might be only 6, closer to the 5 hypothesized. Factor structures were exceptionally clean with very minimal cross-loadings.

Table 1: Initial Factor Results for Specific Training Items

Construct	Initial Items	Items loading	Status
Learner Readiness	7	5	good
Motivation to Transfer	7	6	split into two scales
Personal outcomes-positive	8	2	weak
Personal outcomes-negative	7	6	good
Personal capacity for transfer	6	2	weak
Peer support	7	4	good
Supervisor/manager support	8	8	good
Supervisor barrier	6	0	poor
Perceived content validity	7	3	good
Transfer design	6	4	good
Opportunity to Use	7	2	weak

Table 2 reports evidence of scale viability based on these initial results. Several conclusions are apparent. First, all of the hypothesized factors received support. Second, one scale, transfer effort-performance, split into two scales, one containing negative affect items and one positive affect items.

Table 2: Initial Factor Results for General Training Items

Construct	Initial Items	Items Loading	Status
Transfer effort-performance	8	7	split into two scales
Performance-outcomes	7	6	good
Openness to Change	7	5	good
Performance self-efficacy	8	5	good
Feedback	6	3	good

Discussion/Implications

As HRD shifts toward performance management, measurement of transfer climate will become more important. Validation studies such as this are important to develop standard instruments to measure climate across multiple organizations and intervention types.

This study provides initial evidence of the viability of the Learning Transfer Questionnaire. Although these conclusions are tentative, early indications are that all but one of these constructs will be supported when additional data is collected. This is reinforced by the stronger results in the general climate section of the instrument where the respondent-item ration is approaching 10:1 and the results are much closer to the hypothesized constructs. However, the most important finding to emerge from this research is not that the specifically hypothesized constructs were exactly confirmed. More significant is the indication that a set of clean, interpretable constructs can be identified and scales constructed to measure them. The initial results are quite encouraging that we are moving closer to this goal.

The open issue at this point is whether the additional factors which emerged from this factor analysis are indicative of true additional factors, or simply a statistical artifact due to the low respondent-item ration. We are speculating that it is more the latter, particularly for the specific training items section of the instrument. For example, of the 18 factors which had an eigenvalue greater than 1, factors 15 -18 had no items loading higher than .48, a relatively low loading. Factors 12 - 14 were all 2 item factors which usually have low reliabilities. We speculate that at least some of these factors will disappear with a larger sample.

The lack of an interpretable factor resembling the "supervisor barrier" construct may be due to the large number of management personnel in this initial sample. Since management personnel are not commonly under close supervision by their bosses, it is possible that supervisor barriers would not be a relevant construct to them. This is an area that will require closer investigation.

One interesting finding is that two of the scales, motivation to transfer (a specific training item) and transfer effort-performance (a general training item), each split into two scales. In both cases, the split separated the positive affect items from the negative affect items. Both of these scales are also conceptually similar in that they tap motivational constructs. For example, positive affect items from the motivation to transfer scale included "I get excited when I think about trying to use my new learning on my job" and When I leave training, I can't wait to get back to work to try what I learned". Negative affect items that split apart from this scale included "I hope I will have a chance to use what I learn at my job" and "I will be disappointed if I don't get to incorporate what I learned in to the way I do my job." For the transfer effort-performance scale, positive affect items included "The harder I work at learning, the better I do my job" and "The more training I apply on my job, the better I do my job." Negative affect items included "Trying to use new things on my job just doesn't make any difference" and "There isn't much I can do to improve my job performance." Conceptually the factor separation is similar and may indicate important new construct definitions if confirmed with a larger sample.

Conclusion

Development of a valid and generalizable transfer climate instrument is an ambitious research goal. Based on the experience in other fields of study, we know it can be accomplished and that there is substantial payoff for pursuing an agenda of this type. With psychometrically strong instrumentation, HRD will be in a position to provide more definitive answers to questions about the nature of training transfer and about barriers and enablers to transfer in the work environment.

This preliminary report on the Learning Transfer Questionnaire project indicates that we are approaching the point where such an instrument may exist. Our research agenda in the coming months includes the following steps:

1. Collecting additional data to complete the construct validation with factor analysis.
2. Completing construct validation by establishing convergent validity with constructs believed to be related to transfer climate and divergent validity with constructs expected to be minimally related.
3. Criterion validation in evaluation studies with strong performance measures at the individual and organizational levels.
4. Confirmatory validation studies to confirm validity across multiple companies and training situations.

In a forthcoming reply (Holton, Bates, Seyler & Carvalho, in press) to reactions to our earlier work on this instrument (Holton, et al., in press), we make this statement: "Both authors (who reacted to our article) challenge transfer of learning scholars to engage in collaborative and coordinated efforts in a broad based and ambitious transfer climate research agenda. We agree, and would like to join in their challenge. Our commitment is to make our instrument available to any researcher wishing to test it and collaborate on improving measurement of transfer climate."

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Training Effects on Productivity and Work Quality After the Introduction of New Technologies in the Organization - an Exploratory Study

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The purpose of this study was to describe the effects of training on productivity and quality after the introduction of new technologies in the organization. The conceptual framework of the study was based on the training transfer and sociotechnical systems theories. This exploratory study concluded that a work environment adhering to sociotechnical principles and design acts as a catalyst to training transfer and improvements in productivity and quality.

According to such training evaluation gurus as Kirkpatrick (1987) and Phillips (1988), one of the main objectives of training evaluation is to associate training results with organizational improvement. Such training results are reduced costs, improved efficiency, and increases in quantity and quality.

Given the existence of many other complicating factors, however, some results of a training program are very difficult, if not impossible, to evaluate. In particular, Kirkpatrick (1987, p. 315) states: "A difficulty in the evaluation of training is evident at the outset, technically called 'the separation of variables'; that is, how much of the improvement is due to training as compared to other factors? This is the problem that makes it very difficult to measure results that can be attributed directly to a specific training program." In most cases, Kirkpatrick continues, the measure on a before-and-after basis is directly attributed to the training program even though other factors may have been influential.

Despite the importance of identifying the organizational factors that can influence the results of a training program, little empirical research has been conducted to holistically assess the impact of training on the organization (Baldwin & Ford, 1988; Black & Lynch, 1996; Clark, Dobbins, & Ladd, 1993; Holton, 1996; Rouiller & Goldstein, 1993; Tracey, Tannenbaum, & Kavanagh, 1995). With regard to the weaknesses of training research, Rouiller and Goldstein (1993), stated that "in nearly all studies of training outcomes, the emphasis has been on identifying and examining the characteristics of training programs and individual learners and relating these factors to training and job performance" (p. 377). This approach, the authors continue, ignores the characteristics of the job situation and whether these characteristics influence the transfer of training behavior onto the job.

The problematic nature of training research is also emphasized by Tracey et al. (1995) who stress that most research on training effectiveness has focused on factors within the training program, such as training content and design, while most evaluation efforts have concentrated on reaction and learning measures, which in turn also fall within the training context. Tracey et al. (1995) further point out that despite the potential importance of the work environment, very little research has been conducted to operationalize and empirically assess training-specific situational factors that either facilitate or impede the application of newly learned skills on the job.

Purpose of the Study

Given the existing lack of knowledge with regard to the association of training effectiveness and organizational improvement, the purpose of this exploratory study was to describe the effects of training on productivity and work quality after new technologies were introduced in the organization. Since prior research in this area has been very limited, a secondary objective of this study was to develop a reliable and valid survey instrument with which all the relevant variables and constructs could be assessed. The theoretical framework of the study was based on the training transfer and sociotechnical systems (STS) theories which in turn furnished the moderating organizational variables projected to have an influence on trainee performance.

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Training Transfer Variables In short, the following training transfer climate variables that were found by the Rouiller and Goldstein (1993) as well as the Tracey et al. (1995) studies to have a direct effect on post-training behaviors were incorporated in the survey instrument of the study:

1. The degree to which characteristics of a trainee's job prompted or reminded him or her to use new skills and knowledge acquired in training (task cues).
2. The degree to which trainees were openly discouraged from using new skills and knowledge acquired in training (punishment consequences).
3. The degree to which supervisors supported and encouraged the application of new skills and knowledge acquired in training (supervisory support for new skills).
4. The degree to which trainees received extrinsic rewards for using newly learned skills and knowledge acquired in training (extrinsic reinforcement consequences).
5. The degree to which trainees received intrinsic rewards for using newly learned skills and knowledge acquired in training (intrinsic reinforcement consequences).
6. The degree to which the users of the new technology functioned in a work environment which emphasized innovation and competition (innovative-competitive organization).
7. The degree to which the users of the new technology functioned in an environment in which supervisors and coworkers strongly encouraged the acquisition and use of any new relevant skills and behaviors (social support for new skills).

Organizational Moderator Variables The derivation of the following 10 questions that dealt with the work environment within which the training and new technology interventions were introduced, was based on Pasmore's (1988) STS assessment survey, the properties of motivating jobs as defined by Hackman and Oldham (1980), and the comprehensive seven year meta-analysis study by Macy and Izumi (1993) in which the d-effects of 60 sociotechnical action-levers on organizational outcomes were examined. The purpose of these questions was to determine the degree to which the new technology was introduced in an organization whose design was consistent with sociotechnical systems principles, which in turn "have been demonstrated to produce high levels of commitment and performance" (Pasmore, 1988, p. 157).

8. The degree to which the users of the new technology functioned in a very participative organization characterized by a high degree of employee involvement (Participative organization).
9. The degree to which the users of the new technology were members of self-directed teams (self-directed teams).
10. The degree to which the users of the new technology were intimately involved in communications and decisions regarding the design and development of the new technology (employee involvement).
11. The degree to which the users of the new technology functioned in a multiskill work environment characterized by a common job classification system (multiskill work environment).
12. The degree to which the users of the new technology worked in a flat and decentralized organization, composed of mini-enterprises functioning within the firm (flat organization).
13. The degree to which the users of the new technology frequently participated in multiskill training and retraining programs and were rewarded for doing so (multiskill training environment).
14. The degree to which the users of the new technology were involved in enriched jobs that required a variety and higher level skills which in turn took a long time to master (skill variety).
15. The degree to which the users of the new technology did a whole and complete piece of work and had the authority to make all important decisions about it throughout the process (task identity).
16. The degree to which in carrying out their work activities required by the job, the users of the new technology received clear information about the effectiveness of their performance from the job itself and their supervisors (job/supervisory feedback).
17. The degree to which the users of the new technology functioned in an environment in which a great deal of information about business was shared with employees (information sharing).

Productivity and Work Quality In this study productivity and work quality were measured at the individual level, and each was based on a set of three and five indicators respectively. For the purposes of this study employee productivity was defined in terms of the following three indicators: a) employee output per unit time; b) completion rate of work output; and c) cost reduction. The five indicators that comprised the work quality dimension were: a) internal/external customer satisfaction with quality of work output; b) number of changes or reworks required as % of pieces produced; c) scrap as % of units produced; d) delivery rate of expected output; and e) % of work output meeting specifications.

Research Questions

In all, this study attempted to answer the following research questions:

Research Question 1 If training is used during the introduction of new technologies in the organization, to what extent are the following instructional system components associated with the identified productivity and work quality indicators?

1. Needs assessment (person analysis, task analysis, organizational analysis).
2. Goals and objectives.
3. Audience analysis.
4. Learning task analysis and/or procedural analysis.
5. Evaluation (Pre-test, trainee reactions, summative, impact).

Research Question 2 If training is used as a coping strategy during the introduction of the new technology in the organization, what is the degree of association between the productivity and work quality indicators and the identified training transfer and organizational moderator variables?

Methodology

Subjects The sampling frame of this study consisted of 4097 training, human resource, quality, and organization development professionals who were national members of the American Society of Training and Development (ASTD) and were listed under the Total Quality Management section of the 1995 directory. Out of these 4097 national members, 971 were randomly selected to participate in the study through the circular systematic sampling procedure.

Response rate. The overall response rate for this study was calculated at 33.26% (323/971). Of the 323 returned surveys, 59 belonged to participants who were unable to provide the necessary data and they were therefore returned blank. Furthermore, 29 of the mailed surveys were sent to addresses that were experiencing delivery problems and they were thus dropped from the sample. In all, 264 of the returned surveys (27.19%) had usable data upon which the statistical analysis of this study is based on.

Participants. The participants of this study consisted of training, human resource, organization development, and quality managers with an average age of 43.35 years (SD = 8.32). Fifty-eight percent of the respondents were male and each participant had held his or her present job for an average of 4.65 years (SD = 3.70). Collectively, 96.4% of the respondents had a college degree and represented 46 states. Furthermore, the respondents worked in all sectors of the industry with manufacturing (33.19%), health care (10.54%), and financial services (10.14%) being the majority. Finally, the participants of this study worked in organizations that on the average employed 7,595 employees (SD = 19,244).

In terms of the new technology introduced in the organization, representing 77.2% of valid responses, information technology (i.e., a technology that stores, retrieves, analyzes, or transmits information) was overwhelmingly the type of technology most respondents (203/264) introduced in their organization during the last five years. On the other hand, computer-aided manufacturing technologies (such as robotics and computer-aided design and manufacturing), materials technologies (such as ceramics and nonmetallic composites), and biotechnologies (i.e., technologies that use living organisms to modify plants or animals) were introduced by only 10% of the respondents. The remaining 11.8% of participants introduced a variety of other technologies, such as new equipment or machinery, production systems, and process operations.

Instrument The instrument for this study consisted of a mail questionnaire which was custom-designed for the purposes of this study. The questionnaire was comprised of 39 questions and was pilot-tested on a group of 50 participants before the conduction of the main study.

Method Once the pilot-study was conducted and appropriate changes to the instrument were made, the finalized survey questionnaire was sent to the randomly selected participants. A week after the first mailing a postcard reminder was mailed to all participants. Three weeks after the initial mailing, a second cover letter and a second questionnaire were sent to all non-respondents. The survey was closed three weeks later.

Data analysis After the data from the 264 participants was collected, both descriptive and inferential statistics were used to analyze it. With regard to research question 1, a correlational analysis indicated the degree of association between the instructional system components and productivity as well as work quality indicators. A correlational analysis was also used to partly answer research question 2. Further, multiple regression analyses were used to determine how the instructional system components in conjunction with the identified training transfer and organizational moderator variables and factors related to each one of the identified productivity and work quality indicators.

Stepwise regression was the selection method used when building the regression models for this study. The F-to-enter and F-to-remove values used were 0.05 and 0.01 respectively. In order to increase the reliability of the produced regression models, all outliers greater than three standard deviations were excluded from the analysis.

In terms of reliability, coefficient alpha was calculated for all Likert scale items of the questionnaire. As in the case of reliability, all Likert scale items were also used to empirically construct validate the instrument through the use of a principal components analysis. For this study, the criterion used in order to determine how many components to retain was that of Kaiser (i.e., only components whose eigenvalues are greater than 1 are retained), which according to Stevens (1986) is one of the most accurate and widely used ones.

Results

Reliability and Construct Validity In terms of reliability, coefficient alpha for the Likert type items of the instrument was measured at 0.87. In terms of construct validity, the principal components analysis that used a varimax rotation produced a four-factor solution that accounted for 55.1% of the total variance. The sample size utilized for the principal components analysis was 242 for which the critical value for significant loadings was calculated at |0.33| (Stevens, 1986).

In short, the first rotated factor which accounted for 33.7% of the total variance had the highest factor loadings (fl) from the following eight variables: innovative-competitive organization (6; fl = 0.51); social support for new skills (7; fl=0.66); participative organization (8; fl=0.82); self-directed teams (9; fl=0.56); employee involvement (10; fl= 0.50); flat organization (12; fl=0.52); multiskill training environment (13; fl=0.62); and, information sharing (17; fl=0.79).

From the above variable descriptions, it becomes evident that the first rotated factor deals with the general organizational environment within which the new technology was introduced. Given that the variables that highly correlate with this factor are those that were incorporated in the questionnaire in order to determine the degree to which the new technology was introduced in an organization whose design was consisted with sociotechnical systems (STS) principles, this factor can be interpreted as the "STS organization" factor.

The second rotated factor, which accounted for 8.2% of the total variance, highly correlated with the following variables: multiskill work environment (11; fl=0.70); skill variety (14; fl=0.68); task identity (15; 0.69); job/supervisory feedback (16; fl=0.44). In all, the second rotated factor was successful in grouping the variables that were incorporated in the instrument in order to describe the job dimensions of the work performed by the users of the new technology. This factor was defined as the "job design" factor.

The third factor of the varimax rotated factor matrix accounted for 7.1% of the total variance and drew the highest loadings from the following three variables: task cues (1; fl= 0.74); punishment consequences (2; fl=0.53); and, supervisory support for new skills (3; fl=0.64). Unlike the first two factors which dealt with the organizational and job environment in general, the third factor dealt with the training transfer climate in which the application of new skills and knowledge took place. This factor was therefore interpreted as the "training transfer climate" factor.

The fourth and final rotated factor accounted for 6.1% of the total variance and had the highest loadings from the following two variables: extrinsic reinforcement consequences (4; fl=0.83); and intrinsic reinforcement consequences (5; fl=0.61). The last factor can thus be interpreted as the "rewards for new skills" factor.

In summary, the principal components analysis and varimax rotation produced a four factor solution which was successful in empirically construct validating the instrument. More specifically, the produced factors were able to differentiate between the STS, job design, and training transfer climate variables. It is worth noticing that the innovative-competitive (6) and social support (7) variables which were described by Tracey et al. (1995) as "continuous -learning culture scales" were found to be more highly associated with the "STS organization" factor rather than the "training transfer climate" factor. This finding in essence validates the assertion expressed by Tracey et al. (1995) that a sociotechnical organization is conducive to a work environment that promotes a positive training climate and a positive learning culture.

Significant Correlations of Productivity and Work Quality Indicators With Instructional System, Training Transfer, and Sociotechnical Variables A summary of all significant Pearson correlations between the productivity/work quality indicators and instructional system, training transfer, sociotechnical variables, and four factors is depicted in Table 1. For comparison purposes, Table 1 also contains a summary of all intercorrelations of the productivity and work quality indicators with the posttest and training retention variables. Once again, the variables of employee output, completion rate of work output, and cost reduction represent the productivity indicators, while the remaining five indicators in Table 1 represent the work quality ones. Furthermore, the variables or factors that were selected by the respective regression models as predictors are underlined for easy reference.

The amount of total variance accounted for by the produced regression model for each indicator, were as follows: employee output - 17%; completion rate - no regression produced; cost reduction - 17%; internal/external customer satisfaction with quality of work output - 37%; rework reduction - 11%; scrap reduction - 19%; improvement in the delivery rate of expected output - 9%; and, improvement in the percentage of work output meeting specifications - 16%. It should be noted that when building the above regression models the training retention variable was excluded from the analysis due to the small sample size associated with it ($n=40$).

Before proceeding with the analysis, it is also important to state that not all post-test and training retention scores reported by the participants were actual measurements. More specifically, out of 113 reported post-test scores, 91 or 80.53% were actual measurements which resulted from a summative evaluation, while 22 or 19.47% were estimates. In the case of training retention, only 21 (52.5%) of the 40 reported scores were actual measurements of an impact evaluation that took place three to nine months after the completion of the training program. In terms of mean scores, the mean value of the measured post-test scores is 80.99%, while for the estimates is 64.77%. The difference between the two mean values is 16.22 percentage points and is significant at the 0.001 level . For training retention, the difference between the mean values of the actual measurement (77.67%) and estimated (79.53%) scores is 1.86 percentage points and non-significant.

In terms of the degree of association between the productivity and work quality and training performance, the correlations between post-test as well as retention of training with the productivity and work quality indicators reveal that overall, knowledge of training material immediately after training (posttest score) has a weak association with the identified indicators. The only exception is the significant correlation between post-test score and internal/external satisfaction with work output ($r = 0.266$, $p < 0.05$).

Unlike post-test score, retention of training material three to nine months after completion of training seems to have a relatively much stronger association with the productivity and work quality indicators. In particular, five of the eight correlations between retention of training and the indicators were above 0.200, whereas only one correlation between the post-test score and the indicators was above 0.200. Moreover, it is worth noting that compared to the remaining 24 instructional system, training transfer, and organizational variables shown in Table 1, retention of training material was found to exhibit the highest correlations with the productivity and work quality indicators. It should be noted, however, that the retention of training variable was not incorporated in any of the regression models due to the small sample size associated with it.

According thus to the findings presented so far, one may conclude that retention of training material is a better predictor for productivity and work quality than knowledge of training material immediately after training. Furthermore, one may conclude that retention of training is one of the most

Table 1

Summary of Significant Correlations of the Productivity and Work Quality Indicators[1]

	Employee output	Completion rate	Cost reduction	Customer satisfaction	Rework reduction	Scrap reduction	Delivery rate imprv.	Specifications imprv.
Post test score	.134	.061	.158	.260*	-.025	-.028	.087	.076
Retention score	.329	.028	.288	.350*	.340	.180	-.078	.237
Person analysis	**.270****			.195*			.195*	**.248****
Task analysis			.240*	.204*			.221*	.220*
New tech need - top mgt					**.234****			**.197***
New tech need - suprvs			**.213***	.168*			**.229***	
New tech need - trainees				.172*				
New tech need - other stakehs	**.282****		**.263****		.191*	**.226***		
Trng need - top mgt			**.211***					
Trng need - Supervs				.175*				
G&O Trng mngr			.206*	.183*				
Learning task/ procedr' analysis								**.267****
Trainee reactions				.206**				
Task cues	.169*			.181*			.190*	
Suprv support				.182	.181*			
Intrinsic reinf	.180*	.219*		**.411****			.232*	.264**
Innov-comp org				.220**	**.215***	**.239***	**.184***	.262**
Social support				.193*			.175*	.281**
Multiskill work env	.182*			.197*				.267**
Flat org						**.234***		
Multiskill trng env								.180*
Skill variety				.189*				.269**
Task identity				.212**				.184*
Job/suprv feedback				.193*				
Info sharing				.158*				
STS org factor								
Job design factor				**.165***				.184*
Training transfer climate factor	**.230****			.231**				
Rewards for new skills factor								.192*

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

1. Underlined variables or factors reflect predictors selected by the corresponding regression model.

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influential variables that can positively affect productivity and work quality. These conclusions should be viewed with caution however, given the small sample size associated with the retention of training variable. In addition, given the lack of knowledge with regard to when exactly the productivity and work quality measurements were provided, it is not known to what extent the significant correlations listed in Table 1 would have been different had the furnished productivity and work quality measurements represented the final impact of the new technology intervention.

With regard to the degree of association between the productivity/work quality indicators and instructional system design (ISD) components, person analysis (conducted to determine who in the organization needed training in order to use the new technology) and task analysis (conducted to determine the critical activities or work operations required by the new technology) proved to be the most important ISD variables. Both of these ISD components were found to be significantly correlated with one productivity and three work quality indicators respectively. However, since person analysis was selected by two of the seven created regression models and task analysis by none, one may infer that determining who in the organization needs training in order to use the new technology constitutes the most important ISD component for productivity and work quality improvement.

As far as stakeholder involvement in the decision with regard to the need of the new technology is concerned, the data in Table 1 indicates that participation of all key stakeholders (top management, supervisors, trainees, and others, such as MIS, engineering, and redesign teams) in this decision positively and significantly correlated with seven of the eight indicators. Based thus on these findings, it is safe to conclude that participation of all relevant stakeholders in the decision with regard to the need of the new technology is an essential ingredient for a successful new technology intervention in an organization.

With regard to the degree of association between the productivity and work quality indicators with the training transfer and other organizational variables, intrinsic reinforcement for the application of new skills and knowledge acquired in training and an organizational environment that emphasizes innovation and competition, proved to be the most important variables. More specifically, of all the variables shown in Table 1, both, intrinsic reinforcement and innovative-competitive organization were found to exhibit the highest number (5) of significant correlations with the productivity and work quality indicators. The importance of intrinsic reinforcement for the application of new skills and knowledge can be highlighted even further by noting that its correlation with the internal/external customer satisfaction with the quality of work output indicator ($r = 0.411$, $p < 0.01$) represents the highest correlation depicted in Table 1.

Other training transfer and organizational variables that were found to be significantly correlated with at least three productivity or work quality indicators were: task cues - the degree to which the trainee's job prompted or reminded him or her to use the new skills and knowledge acquired in training; social support - the degree to which the user of the new technology functioned in an organization in which supervisors and coworkers strongly encouraged the acquisition and use of any new relevant skills and behaviors; and, multiskill work environment - the degree to which the users of the new technology functioned in a multiskill work environment characterized by a common job classification system.

Conclusions

In summary, the new technology and training interventions were found to be more closely associated with improvements in productivity and work quality when they were introduced in an organizational environment which supported, encouraged, and rewarded the acquisition and application of new skills and knowledge, as well as emphasized innovation and competition. Again, these findings are consistent with sociotechnical theory and quantitatively support the premise that investments in the development of the social system can assist the organization achieve higher levels of productivity and quality.

Based on the results shown in Table 1, one may also conclude that the identified training and organizational variables are more highly associated with work quality, rather than productivity. In particular, the five work quality indicators collectively were found to exhibit 43 significant correlations with the identified training and organizational variables, while the three productivity indicators with only eleven. This discrepancy in the number of significant correlations with the training transfer and other organizational variables may be attributed to primarily two reasons: a) improvements in productivity depend on full mastery of new skills and knowledge which in turn takes time to occur; and, b) productivity is dependent on work quality.

As far as the interrelation between productivity and quality is concerned, Deming (1986) has long advocated that improvements in productivity are dependent on improvements in quality. Deming's assertion is that as quality improves, costs decrease because of less rework, fewer mistakes, and fewer delays. As Deming (1992) put it, "improvement in quality transfers waste of man-hours and of machine-time into the manufacture of good product and better service. The result is a chain reaction - lower costs, better competitive position, happier people on the job, jobs, and more jobs" (p. 2).

In many respects then, the fact that the findings of this study show a higher degree of association between the training and organizational variables with work quality improvement, rather than productivity improvement, should be considered as an expected outcome that follows and validates existing conceptual theories. Another implication that stems from this study therefore, is that one should expect improvements in productivity to take longer to materialize, compared to work quality, when introducing new technologies in the organization. How longer it will take for productivity to improve will most likely depend on the sociotechnical nature of the organizational environment within which the training and new technology interventions are introduced.

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Climate For Training Transfer: A Progress Review and Recommendations for Further Research

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Baldwin and Ford's 1988 review of the training transfer literature found existing research to be limited and problematic, especially in regard to the study of the effect of work environment on transfer. This paper examines the empirical studies conducted on work environment since Baldwin and Ford's review to determine what progress has been made on their research recommendations and what research gaps continue to exist.

Transfer of training, defined as the effective and continuing application of newly acquired knowledge, skills, and attitudes to the job, is a crucial issue for human resource development professionals (Broad & Newstrom, 1992, Wexley & Latham, 1991). Enormous investments in training are believed to be largely wasted because of inadequate transfer, especially in the "soft skill" areas of management development. For example, Dixon (1990), after examining three decades of evaluation studies on management development programs, concluded that the programs appeared to have little lasting impact.

In their review of the training transfer literature, Baldwin and Ford (1988) proposed a conceptual framework for understanding and studying the transfer process. They suggested that training transfer is a function of three variables: (1) trainee characteristics, (2) learning and retention, and (3) work environment. The degree of learning and retention, in turn, is impacted by training design and also influenced by trainee characteristics and work environment.

Of these three input factors to transfer (design, trainee, and environment), Baldwin and Ford found that work environment had the least amount of empirical research available to guide practice. They found only seven studies that examined the influence of the work environment on transfer of training and none that attempted to change the work environment itself. In their critique of the work environment research, Baldwin and Ford identified four major problems, all methodological in nature: correlational data, self reports of behavioral change, inadequate time frames, and inadequate sampling across work groups and organizations.

In their conclusions and recommendation for further research, Baldwin and Ford stressed the need to identify and operationalize key work environment variables, such as supervisory support, to a level of specificity that allows for development of interventions for changing environment characteristics and testing their effects on transfer. They called for more robust measures of the generalization and maintenance of behaviors, with the measures taken at multiple intervals over longer periods of time to examine the interactive effects of work environment and time on skill utilization and skill decrements. Finally, they suggested that the effects of work environment characteristics across work groups and organizations need to be examined, as well as the individual level of analysis.

Since Baldwin and Ford's review, researchers have begun to conceptualize the manner in which work environment factors influence the transfer of learned behaviors to the job through a construct referred to as *organizational transfer climate* or the *climate for training transfer* (Goldstein, 1993). Tannenbaum and Yukl (1992), in their review of the literature, noted the importance of a supportive organizational transfer climate but found very few empirical efforts and virtually no understanding of what constitutes an organizational transfer climate. Without first developing a valid and reliable measure of the transfer climate construct, it would seem difficult for research on the impact of the climate on transfer of training to move forward.

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Research Questions

The purpose, therefore, of this paper is to examine the empirical studies conducted since Baldwin and Ford's review to determine what progress has been made on their research recommendations and what research gaps continue to exist. The following exploratory questions framed and guided the investigation:

1. Have Baldwin and Ford's concerns about correlation-only studies, single source data, short time spans, and levels of analysis issues been addressed?
2. What work environment factors have been empirically studied? How have these factors been operationalized and measured? Which of these factors appear to be most important?
3. Have valid and reliable methods been developed to measure organizational transfer climate?

Method

Given Baldwin and Ford's call for more rigorous scientific investigation of the climate / transfer phenomenon and a desire for field tested prescriptions, the search for this review was limited to empirical studies conducted in a field setting published since 1987 and reported in refereed journals. To focus the study, only articles that examined the effect of one or more post-training climate variables on training transfer were selected for further analysis.

Results

As a result of the search, 21 empirical articles were reviewed, from which 9 were selected that clearly met the search criteria. Table 1 presents a summary of the 9 empirical studies conducted since 1987 which included analysis of the effect of transfer climate variables on post-training behaviors. It should be noted that the majority of the studies also included analysis of other independent variables, such as trainee characteristics, but these variables are not reflected in the table.

Design Problems in the Study of the Climate / Transfer Relationship An examination of Table 1 suggests there has been relatively little progress on Baldwin and Ford's 1988 recommendations and the major problems with the study of work environment noted in their review remain. Seven of the nine studies used a pre-experimental, one-shot case study or one-group pretest-posttest design, designs subject to validity problems and from which causality cannot be inferred. Only two of the studies used a control group design with random selection (Brinkerhoff & Montesino, 1995; Tziner, Haccoun, & Kadish, 1991). Tziner et al. (1991) included a variable on the work environment in their study of the effect of a relapse prevention module on the use of trained skills. However, no main effect on skills transfer was found for the work environment factor. Brinkerhoff & Montesino (1995) appear to offer the only study in which an intervention was made to change the work environment in the manner recommended by Baldwin and Ford. The independent variable was management support for training. Supervisors of trainees in the experimental group conducted fifteen minute meetings pre and post-training using a discussion checklist. Trainees who received the intervention reported significantly more transfer of training than those trainees who did not receive the before and after interventions. However, even this study had limitations, relying on self report data only and failing to establish controls to monitor or insure that the before and after briefings took place as designed.

The criterion problem of using only self-reported measures of effort to transfer also continues to be an issue. As seen in Table 1, only three of the studies attempted to collect data on transfer

Table 1. Summary of Empirical Studies (Since 1987) Which Included Analysis of the Effect of Transfer Climate Variables on Post Training Behaviors

Study	Experimental Design	Sample & Context	Transfer Climate Variables	Source For Transfer Behaviors / Timing	Findings
Brinkerhoff & Monesino (1995)	Post-test only control group design; survey w/ 5 pt scale; t-test	91 mid-managers / supervisors; pharmaceutical co.; behavioral skills courses	- Supervisor support (pre and post training discussion checklist with trainee)	Self reports / 6 weeks after training	Significant; more perceived transfer from group receiving the supervisory support intervention.
Facteau, Dobbins, Russell, Ladd, & Kudisch (1995)	One-shot case study; suvey w/ 5 pt. scale (14 constructs); LISREL VII	967 managers / supervisors; state government; those who had completed at least one course in training curriculum	- Subordinate support - Peer support - Supervisor support - Management support - Task constraints	Self reports / varied timing	Peer and subordinate support were only environment factors found to be significantly and positively related to perceived training transfer.
Ford, Quinones, Sego, & Sorra (1992)	One-shot case study; survey w/ 7 pt. scale; hierarchical regression	180 graduates from Air Force technical training program and their supervisors; aircraft maintenance - opportunity to perform trained skills (breadth, activity level, type of task)	- Supervisor attitudes and perceptions of trainee - Workgroup support - Work flow (pace)	Self reports / 4 months after training	Positive attitudes of supervisor related to performing greater number of trained tasks; positive perceptions of supervisors and supportive workgroup associated with performing more of complex tasks; work flow not significant.
Quinones, Sego, Ford, & Smith (1995)	One-shot case study; survey w/ 7 pt. scale; LISREL VII	118 graduates from Air Force technical program on equipment maintenance; opportunity to perform trained tasks	- Supervisor attitudes toward subordinate - Workgroup support	Self reports / 4 months after training	Supervisor attitudes and workgroup support found to have direct impact on opportunity to perform trained tasks the first four months on the job.
Rouiller & Goldstein (1993)	One-shot case study; surveys w/ 5 pt. scale; multiple regression	102 trainees attending 9-week assistant manager training program on admin. and management of fast food restaurants	- Situational cues - Consequences	Unit Managers and experienced crew members / evaluation of trainees after several weeks on the job	Climate variables significantly related to transfer behavior; both situational cues and consequences were each found to add significantly to the explained variance.

Table 1 (continued)

Study	Experimental Design	Sample & Context	Transfer Climate Variables	Source For Transfer Behaviors / Timing	Findings
Tesluck, Farr, Mathieu, & Vance (1995)	One-shot case study; survey w/ 5 pt. scale; self reports; 3-stage hierachical regression	252 employees, supervisors; state transp. agency; employee involvement skills; 3 levels of analysis: individual, unit, and sub-organization	- Sub-organization and unit: managers attitudes and behaviors - Sub-organization and unit: climate for participation / bottom up decision making	Self reports / timing not stated	No support for relation of managers attitudes and behaviors or climate for participation to generalization of knowledge and skills at either sub-organization or unit level.
Tracy, Tannenbaum, & Kavanagh (1995)	One group, pretest-posttest; surveys w/ 5 pt.scale; LISREL	104 suprmarket managerial trainees; supervisory skills training	- Transfer climate social and goal cues task cues no feedback punishment extrinsic reinforc. intrinsic reinforc. - Learning culture social support continuous innov. competitiveness	Self and supervisor; pre and posttraining questionnaire / 3 weeks pre and 6-8 weeks post.	Supported for both Transfer Climate and Learning Culture; all sub-scales significant; social factors exhibited highest path coef.
Tziner, Haccoun, & Kadish (1991)	Posttest only control group design;survey w/ 5 point scale; 3 x 3 x 2 ANOVA	81 military instructors (45 test, 36 control); Israeli Defense Forces; How to develop training packages; test group received additional 2 hour module on relapse prevention (RP).	Perceived work environment as supportive for transfer	Self and supervisor / 10 weeks after training	Not supported - no main effect for the work environment factor.
Xiao (1996)	One-shot case study; questionnaire with scales; hierarchical regression	106 production workers on a circuit board production line in China	- Work design - Rewards - Supervision - Peer relationships	Self reports; 9 months after training	Work design and supervision were found to be significant variables in training transfer.

behavior from sources other than the trainee. Tracey et al. (1995) and Tziner et al (1991) included surveys of supervisors to assess transfer behavior and Rouiller and Goldstein (1993) asked managers and experienced crew members to complete a survey of behavior based on training objectives.

The collection of transfer behavior data soon after training and with limited data points continues to remain a problem. While the time periods for initial data collection in this group of studies range from 6 weeks to 4 months, no studies attempted to collect measures at multiple intervals over extended periods of time to determine the degree of skill maintenance.

Finally, only one study (Tesluck, Farr, Mathieu, & Vance, 1995) attempted to look at differences in support and other climate factors across different work groups, in this case, a state transportation agency with eleven operating suborganizations similar in size, operations, and budgets, and units within each suborganization. No relationship was found between managers attitudes and behaviors or other climate related variables and trainee generalizations of skills to the job at either the suborganization or unit level.

Work Environment Variables and Their Relative Importance Table 2 presents a matrix of the climate factors examined in the 9 empirical studies along with representative definitions. Questionnaires, designed with 5 or 7-point likert scales, were the only method of data collection.

In regard to factor importance, the most distinct pattern that seems to emerge in Table 2 is the significance of supervisor and peer support as key transfer climate factors. On the other hand, a variable of interest that appears to have had little study is the role of the subordinate in transfer. The one study that included subordinates, Facteau et al. (1995) found subordinate support to be significantly related to perceived training transfer.

Measurement of Organizational Transfer Climate In regard to organization of the variables into a meaningful model for research and measurement, there appears to be two approaches to thinking about the underlying factors. One approach seems to cluster factors into two related dimensions: one social or interpersonal in nature and the other dealing with the organizational factors that support or hinder transfer. Wexley & Latham (1991) use this approach in discussing work environment and transfer in their general training text. However, the scales developed from this perspective and used in the study of climate in the literature have generally been selected a priori from parts of previous survey efforts and do not have any reported validity or reliability statistics. The second approach, conceived by Rouiller and Goldstein (1993), based the survey scales on a behavior modification model. They sorted factors into two general categories of workplace cues, situational and consequence, each with four sub-scales (see definitions in table 2). Rouiller and Goldstein's scales were derived a priori using expert sorting judgments, not factor analysis. Tracey et al. (1995) replicated and extended Rouiller and Goldsteins work, using items drawn from their instrument along with an additional dimension of the work context called continuous learning culture. Again, a significant relationship with post-training behaviors was found for both the climate measure and the culture measure. However, their climate scales were similar but not identical to those used by Rouiller and Goldstein because they were derived from factor analytic techniques.

Even though Rouiller and Goldstein and Tracy et al.'s studies represent the most advanced work on measurement of climate factors to date, we do not seem to have enough data to determine with any degree of certainty which dimensions and corresponding scales are valid and reliable. For example, a recent study by Bates, Holton III, and Seyler (1996) failed to validate Rouiller and Goldstein's hypothesized structure of transfer climate factors. Furthermore, based on an examination of published instruments that deal with organizational climate, it appears that no "off the shelf" instrument is currently available to assess the construct of organizational transfer climate in a valid and reliable manner. Thus, it appears that further research is necessary to identify and refine the underlying factors of the climate for transfer construct and a series of validity and reliability studies across a variety of work and organizational situations need to be conducted in order to create a useful organizational transfer climate measure.

Table 2. Climate Factor Research Matrix and Definitions

	Management	Supervisor	Peers	Subordinate	Situational Cues	Consequences	Work Flow / Job Design	Situational Constraints	Learning Culture
Brinkerhoff / Montesino (1995)		X*							
Facteau et al (1995)	X	X	X*	X*				X	
Ford et al (1992)		X*	X*				X		
Quinones et al (1995)		X*	X*						
Rouiller & Goldstein (1993)		X*	X*		X*	X*			
Tesluck et al (1995)		X							X
Tracy et al (1995)		X*	X*		X*	X*			X*
Tziner et al (1991)		X	X					X	
Xiao (1996)		X*	X			X	X*		

* significant relationship to training transfer established

Transfer Climate Factor Definitions - Representative Examples:

Social Support: extent to which managers, supervisors, peers, and subordinates facilitate, encourage, and support learning; includes setting expectations and goals, providing opportunities to utilize new skills, tolerating mistakes, and reinforcing efforts to transfer (Facteau et al, 1995). (Columns 1-4)

Situational Cues: cues that serve to remind trainees of their training; includes goal cues, social cues, and task cues. (Rouiller & Goldstein, 1993).

Consequences: feedback that affects the further use of what has been learned; includes positive feedback, negative feedback, punishment, and no feedback (Rouiller & Goldstein, 1993).

Work Flow / Job Design: extent to which characteristics of a trainee's job allow him or her to use new skills and behaviors, such as pace of work (Ford et al, 1992).

Situational Constraints: lack of resources that inhibit use of new skills; includes information, tools, supplies, and time (Tziner et al, 1991).

Learning Culture: extent to which the company seems to value and emphasize employee learning as part of everyday work life (Tracy et al, 1995).

Recommendations

Two steps are clearly needed to further our knowledge of the climate construct and it's influence on transfer: (1) development and validation of a reliable survey instrument, and (2) studies of true empirical design which intervene to change climate variables and evaluate the impact on transfer.

Development of a Survey Instrument Glick (1985) has provided recommendations on how to develop climate specific measures that are valid and reliable. His suggestions include (1) obtaining representative samples from different types of organizations, (2) using multiple methods of data collection, such as using trained observers to supplement survey data, (3) using descriptive rather than affective questions, and (4) controlling for bias with random sampling. Good examples of the use of Glick's recommendations exist in literature for other climate referent studies (cf. Zohar, 1980; Kozlowski and Hults, 1987).

Research Designs Given a valid and reliable instrument for measure transfer climate, attention must then be paid to designing true experimental or quasi-experimental studies that address the problems related to causality, criterion, and time raised by Baldwin and Ford. For example, a pretest-postest control group design using analysis of covariance would give us relative confidence that the selected independent (treatment) climate variable was responsible for observed differences in transfer, and that differences were not due to instrumentation, history, or other sources of invalidity. In addition, repeated measures of transfer need to be conducted at least six months and one year following the training to determine long-term retention and maintenance of the behaviors.

Within the framework of better experimental designs, a number of the climate variables could be investigated. For example, since supervisor influence appears to be a significant variable in the transfer climate, a good beginning point would be to replicate Brinkerhoff and Montesino's (1995) study, which provided for a simple intervention where supervisors of trainees in the experimental group conducted brief pre- and posttraining meetings using a discussion checklist. By using the pretest-posttest control group design, providing for supervisor assessment of transfer in addition to self report data, and taking repeated measurements over time, we could reach more definitive conclusions about the impact of supervisor involvement on training transfer. Another interesting study would be to intervene at the subordinate level, providing subordinates of supervisors receiving management skills training a briefing and some coaching on how they can help their supervisors be successful in the transfer of the leadership behaviors.

Conclusion Although research has continued to be conducted, the world of knowledge in regard to the effect of post-training work environment on training transfer does not appear to have changed much since Baldwin and Ford's 1988 review. In addition, transfer of training is a complex, systemic issue. As indicated by Baldwin and Ford's model, the transfer climate is only one part of the equation. But before we can design and test a framework that incorporates the more complex interactions among the inputs of trainee characteristics, training design, and work environment, it would seem appropriate to isolate and document empirically the most important factors in each area of input. In regard to work environment, this progress review of recent research indicates that there is still much work to be done on the theoretical development and measurement of the construct now being referred to as the organizational transfer climate. The task before us is one of model building, conceptualizing the system in terms of variables and relationships that will be intellectually manageable and then rigorously examining the components of the model until we feel we have a valid representation of the real system which will provide the basis for prescriptive intervention.

The first priority, then, is the development of a valid and reliable instrument for assessing transfer climate. As noted by Bates et al. (1996), various conclusions are currently being drawn about the importance of transfer climate while using a variety of instruments of varying quality. Given an appropriate instrument, the next step to advance our knowledge of the effect of transfer climate on newly trained behaviors would be the use of more robust experimental designs to isolate and examine the various hypothesized climate factors. As noted by Baldwin and Ford and confirmed by this progress review, conclusions from the existing research are problematic, given the relatively short-term, single-source, correlational nature of the data. It is hoped that this progress review of recent research along with the proposed model and call for stronger instrumentation and research designs will help spur further efforts at expanding our knowledge of the transfer of training process.

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Learning Lenses of Leading Organizations: Best Practices Survey

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Despite an explosion in the literature on learning organizations, there is very little empirical research. Practitioners in many organizations remain skeptical about the benefits, meaning, and feasibility of becoming a "Learning Organization." This paper describes a study of eight leading organizations who participated in a "Best Practices Survey." The results indicate that initiatives are more systemic and more broadly conceptualized than the research has indicated to date. Substantial support was found to show that organizations view learning initiatives through multiple lenses with a clear and sustained focus on strategic outcomes.

The most powerful and useful concepts in the study of organizations are simple ideas presented clearly, a combination that occurs less often than one might imagine. This paper will explore the muddy waters surrounding the concept of the learning organization, a term popularized by Peter Senge in his book The Fifth Discipline (1990). In this paper the terms learning organization (LO) and organizational learning (OL) refer to a related and overlapping set of constructs. This paper will not provide yet another definition of either term. Rather, it is an attempt to understand and clearly articulate how, through learning, organizations are meeting the challenges posed by "permanent white water." Both a seminal study and actual case study examples from organizations who participated in a "Best Practices Survey" will be explored to provide insights that may illuminate the confusion, resistance, and multiple approaches to understanding and interpreting the meaning of "learning organization" and "organizational learning."

Problem Statement and Theoretical Framework

A special interest group of the American Society of Training and Development (ASTD) recently completed a survey of eight organizations across several industries, investigating current practices and behaviors in implementing the kinds of systemic changes involved in becoming a learning organization. The Learning Organization Network of ASTD has been investigating this topic for several years. The study reported here really began in 1993 when the idea of a "lens" framework was proposed in the article, "Portrait of a Learning Organization: Stories of Early Adopters" (Marsick et al., 1994). In that grounded theory study the authors submitted that a system level learning theory-in-use might be guiding the particular approach a given organization takes as it transforms itself. The framework of four lenses emerged to describe the learning processes of organizations who characterize themselves as learning organizations. In other words, an organization might use one of four lenses through which it views these processes, and that lens would, in turn, shape the initiatives.

The OL literature and more recently, the LO literature have been the subjects of comprehensive reviews and structural analyses for organizing thematic elements (Argyris and Schon, 1978; Huber, 1991; Dixon, 1992; DiBella, 1996 among others). The lens framework, on the other hand, arose from the interview responses provided by the organizations who participated in the study by Marsick et al.

The research results that will be reported here came about as a result of the third iteration of this ongoing inquiry by the ASTD Special Interest Group. The lenses, cultural (C), experiential

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(E), informational (I), and structural (S), were elaborated through a number of behaviors that should be observable if that lens is active. This was accomplished through an extensive literature review and analysis and comprised the second iteration in the research process. Once the behaviors for each lens were developed it was possible for yet another group of volunteers to generate and pilot a semi-structured interview guide. With the completion of the pilot, volunteers were sought from the Learning Organization Network of ASTD to conduct the interviews with senior managers of learning organization initiatives in organizations who were actively engaged in such initiatives. Ultimately eight organizations participated in the interview process and the results were submitted to this researcher for coding and analysis.

Research Questions

The purpose of the interview guide was threefold. First, the questions were designed to elicit in-depth responses regarding the types of interventions, change strategies, and learning initiatives underway in these organizations. Hence, the questions sought both broad philosophical descriptions and behaviorally oriented practices. Second, the researchers posited that given the size and resources of the participating organizations, a number of best practices regarding change initiatives, specifically focused on creating and sustaining learning as an organizational capability, would emerge from the interview data. Third, the researchers, while interested in testing the lens framework, primarily used it as a vehicle to develop an integrated framework of behaviors for exploring learning theories-in-use by these large organizations.

This exploratory study was designed to provide preliminary answers and to guide further inquiry regarding three questions:

1. To what extent do organizations operate within a particular lens when pursuing change strategies dependent on increasing their organizational learning capacity?

2. To what degree are certain behaviorally oriented practices present and consistent across organizations in which learning organization initiatives are underway?

3. To what degree can theories-in-use be identified both through system level design and through specific practices guiding interventions across organizations in which learning organization initiatives are underway?

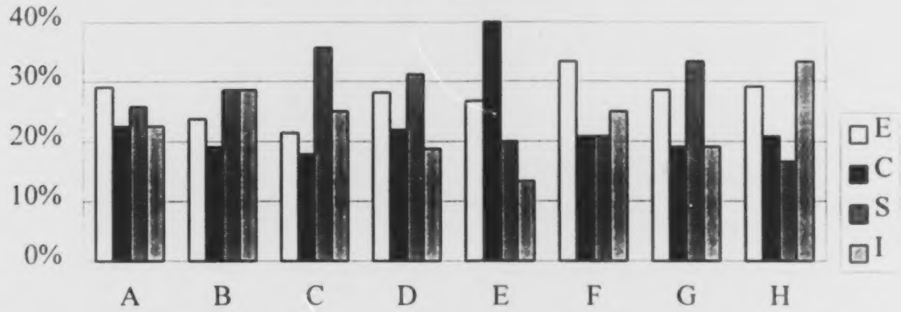
Methodology

The research team (see **Acknowledgments**) that developed the behavioral descriptions of the lens framework identified five core behaviors and a varying number of secondary behaviors for each one of the four lenses. These behaviors, sorted by lens, provided the operational definitions of the lenses and lent themselves well to the following coding strategy. An initial analysis of the interview data was completed using a simple computerized word-match search process to identify terminology from the interview data consistent with the behavioral descriptors for each lens. Deeper content analysis followed to assess the validity of the word-match process and to identify contextually embedded behaviors not revealed by the initial analysis. Once identified, these behaviors were coded by lens, tallied, and graphed by organization. Four organizations were then selected for even deeper analysis on the basis of their most preferred lens. These four organizations each revealed a different preferred lens yielding the opportunity for cameo case studies to further explore the feasibility of the lens framework. The content analysis was validated by two other raters familiar with the research framework but blind to the initial results. Differences were resolved through consensus.

Results and Conclusions

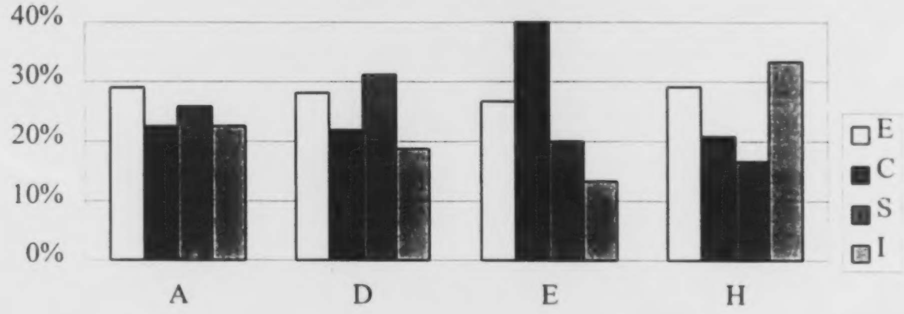
In response to the first research question, the hypothesis that an organization uses a single lens for shaping initiatives did not hold up as strongly as had been predicted by Marsick et al., but the results resemble the preferred and backup preference patterns often seen on multi-dimensional style instruments. Seven of the eight organizations displayed a primary lens preference and a back-up lens preference. One organization had an equal primary preference for the structural and informational lenses.

Table 1. Percent of Behaviors Grouped by Lens
All Eight Organizations



Beyond the analysis for lens preference, the best practice information was gleaned from both a quantitative analysis, noting frequency of the behaviors across organizations, and from content analyses focused on the desired future states of the organizations as described by the interviewees. Four organizations, each one holding a different primary lens preference, were selected for cameo profiles to check some of the hypotheses put forth in the seminal article (Marsick et al.). There the authors posited that while an organization may have a distinct preference for a single lens, that preference has certain shortcomings which may inhibit the effectiveness of the learning organization initiative. The examination of the four companies revealed that in each case the back-up lens preference would counteract the potential drawbacks of the most preferred lens.

Table 2. Percent of Behaviors Grouped by Lens
Four Selected Organizations



For example, Company A's most preferred lens is experiential. Although this lens may be the most desirable way to deeply engage organizational issues, challenge framing assumptions, and alter existing behaviors and practices, the degree to which an organization is able to support these learning opportunities may be inhibited by a functional structure that severely restricts the flow of information. Hence, the learning opportunities are not available across the organization. However, Company A's back-up lens (second most preferred lens) is structural (see Table 2). The behaviors attributed to the structural lens all describe structural interventions and configurations that would support collaboration and dialog with all organizational stakeholders.

An organization that responds to triggers from the environment through the structural lens, as is true in the case of Company D, may find that function does not necessarily follow form. Using the experiential lens as the back-up enables the organization to support structural changes with ample developmental opportunities for increasing member capacity for deep learning. Similarly, an organization with a decided preference for the cultural lens (Company E) may become impatient and frustrated by the slow pace at which true cultural shifts occur. A back-up preference for the experiential lens indicates once again, a significant organizational commitment to a broad range of employee developmental plans and opportunities to infuse the organization with the human resource capability to withstand high change *and* engage in learning.

Finally, Company H, whose preference for the informational lens slightly exceeds that for the experiential lens, recognizes that, "Information systems are only as intelligent as the users that create and access them" (Marsick et al, 1994, p. 249). As in the case of the other three organizations selected for the cameo profiles, the behaviors attributed to the experiential lens are visible when there is a significant commitment to employee development from learning perspective. Table 3 summarizes both the learning processes and strategic outcomes for these four organizations.

The experiential lens is either the primary or back-up lens for these four organizations. Further, out of the total sample of eight organizations, this lens was found to be most preferred by one organization, of secondary importance to six organizations, and of tertiary importance to one organization. This finding appears to provide support for the second research question which asks, to what degree are certain behaviorally oriented practices present and consistent across organizations in which learning organization initiatives are underway? Marsick et al. noted that the transformational process associated with the experiential lens referred to the deliberate engagement of organizational issues to both resolve, and learn through them. In order for this engagement to successfully occur the organization must enhance individual, group and organizational capacity for innovation and learning (p.248). Not only were the behaviors associated with the experiential lens consistently noted across all eight organizations, seven of the eight organizations demonstrated a marked preference for developing those behaviors in their work forces.

Finally, in response to the third research question, these findings indicate that, at least for the organizations in this sample, initiatives are more systemic and more broadly conceptualized than the research has indicated to date. Substantial support was found to show that organizations view learning initiatives through multiple lenses. The implications of these findings for HRD are discussed below.

Table 3. Summary of Interview Results for Companies A, D, E, & H

Company	Preferred Lens	Primary Learning Processes	Strategic Outcome
A	Experiential	Lots of JIT Training. People involved in their own development. People understand their role in the organization. Only org where people reported, "This is fun!"	Dramatic reduction in cycle time - staff completed a project in eight days that would have taken six months to complete prior to learning organization initiative.
D	Structural	Heavy emphasis on measurement of performance. Structure promotes dialog, creativity and information sharing. Structure adapts easily to new tasks.	Company moving from "analysis paralysis" to maturing customer focus in an effort to be well prepared for entering a deregulated environment as a highly successful competitor.
E	Cultural	Vision driven with minimal bureaucracy. Practices replaced when usefulness is outlived. Heavy emphasis on valuing differences to become truly transcultural.	Leadership development - final metrics due in 1997 but all milestones have been met.
H	Informational	Extensive use of information technology for environmental scanning and all types of internal communication. Systems in place to capture and store learning.	Internal customized training group competes successfully (on full charge-back system) with outside vendors who are often far less expensive but not nearly as customized.

Frequency of Behaviors Additional findings as displayed in Table 4 indicate that, although the most preferred lens may vary from organization to organization, the most frequently reported behaviors and the least frequently reported behaviors form baseline indicators of important organizational capabilities. The most frequently reported behaviors could serve as guideposts for many organizations who are engaging in change initiatives through organizational learning. These best practices then are the necessary but far from sufficient conditions for moving forward. Without exception, the least frequently reported behaviors were voiced in terms of a desired future state. Comments such as "we're not there yet," or "that is something that is very difficult for us to do but we are trying," framed attempts at institutionalizing the behaviors that either have been identified in the literature as indicators of organizational learning or supporting organizational learning, or are firmly held beliefs of the organizational leaders of participating organizations.

Table 4. Summary of Most and Least Frequently Reported Behaviors
Eight Organizations

Lens	Most Frequent Behaviors All Companies	Most Infrequent Behavior All Companies
Cultural	Tradition and norms are challenged in the search for better ways. Bureaucracy is minimized in favor of productivity.	Diversity, the valuing of difference, is perceived as integral to shared learning. Risk-taking is actively encouraged at all levels of the organization
Experiential	Learning is supported with plentiful resources. Leaders model calculated risk-taking and experimentation. People actively take responsibility for their own development. People actively seek to learn from each other in the course of their work.	Training is assessed based on learning outcomes.
Structural	Performance measures relate to learning outcomes. Work groups are organized around business processes.	Mentoring and coaching are vital to each individual's role.
Informational	Useful information from the customer, supplier and community is fed back into the organization. Systems are in active use for people to express their ideas.	

Implications for HRD

The research results' implications for HRD theory and practice are two-fold. First, a number of HRD professionals have been intrigued with the concept of organizational learning or learning organizations, but they have been understandably skeptical of what they fear will be another set of "flavor of the month" interventions. Further, this relatively new area of research remains highly abstract and difficult to apply. These issues are further complicated by the apparent values alignment for the HRD professional with the construct of learning. After all, is that not what HRD is all about—development and change through learning? The stories of these eight organizations, told through the interviews and analyzed through a behavioral filter, illuminate some intra- and inter-organizational perspectives on certain types of change initiatives. However, a recurring theme throughout the interviews was a resistance to labeling various processes or initiatives as "learning" or as typical of a "learning organization." HRD practitioners must remain sensitive and attuned to the strategic goals of organizations and assist their organizations in establishing clear links between learning interventions and strategic outcomes.

Second, the research process itself, the iterative nature, all-volunteer effort, changing groups of researchers, and developing design, provides a fresh model for HRD practitioner/scholar research partnerships. This design, while unconventional, provides numerous opportunities for challenging existing assumptions and reexamining the research questions. The process is shared here in an effort to encourage HRD students, scholars, and practitioners to experiment with their research designs, take some risks, and involve stakeholders in non-traditional ways. The topic itself demands innovative research techniques and this design expands standard notions of organizational research.

Acknowledgments

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Sincere appreciation for participation as interview subjects goes to the following companies: Motorola, Sun Microsystems, Integris *Health*, Pacific Gas and Electric, City of New York - Department of Personnel, Ameritech, University of Texas Medical Branch School of Allied Health Sciences, and AT&T.

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Dimensions of the Learning Organization in Family-Run Firms

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This paper reports findings from an ongoing study of dimensions of the learning organization found in family run firms. The research project involved use of the Dimensions of the Learning Organization Questionnaire (DLOQ) developed by Watkins and Marsick (1996) to determine profiles of high and low scoring firms. These dimensions of the learning organization significantly predicted overall financial and knowledge organizational performance.

Despite long term interest in the concept of the learning organization, little has been done to empirically document and explore the phenomena in family run firms. Some argue that existing theories of organizations may not hold true for family businesses (Dyer, 1994; Handler, 1989; Hollander,1990). Dyer (1994), for example, says that , "...many of our theories about the nature of individuals, groups, and organizations may not hold up in the context of the family firm" (p. 125). This study will help researchers identify family businesses' current performance relative to these dimensions of the learning organization.

Research by Watkins and Marsick (1993, 1996) identified seven dimensions of the learning organization which might indicate the capability of the organization to learn. They have developed an instrument to assess these dimensions in organizations. Therefore, the purpose of this research was to measure learning organization dimensions across one type of organization, the family-run firm using their instrument.

Three research questions were answered in this study:

1. Is there a significant difference across family-run firms [as differentiated by size and annual revenue] on the seven dimensions of the learning organization?
2. Is there a significant difference between where the organization reports that it is now and where it should be relative to the seven dimensions of the learning organization?
3. Is there a significant difference on where an organization is now on the seven dimensions of the learning organization between high and low financial and knowledge performance family firms?

Theoretical Framework

The theoretical framework undergirding the research is a model of the learning organization developed by Watkins and Marsick (1993, 1996) in which critical changes which must occur at the individual, group, organizational, and system levels were identified based on an extensive review both of learning organization literature and practical learning organization experiments. These action imperatives form the basis for the Dimensions of the Learning Organization Questionnaire (DLOQ) used in this study. Six dimensions were identified in Watkins and Marsick (1993), and an additional dimension concerning the overall leadership required to implement these action imperatives was added in their later work (Watkins and Marsick, 1996). These dimension are: create continuous learning opportunities, promote dialogue and inquiry,

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promote collaboration and team learning, empower people toward a collective vision, establish systems to capture and share learning, connect the organization to its environment, and provide strategic leadership for learning. An additional scale measures financial and knowledge performance.

Family businesses as learning organizations present interesting theoretical questions. On the one hand, the characteristics of the learning organization seem ideally suited to the needs for continuous learning and change of family businesses transitioning from one generation's leadership to that of another. On the other, certain traits of family businesses and of family business leaders in particular may mitigate against adoption of learning organization characteristics (Selden, 1996).

Family businesses often operate as though they had blinders on, oblivious to the pressures being exerted on their companies from their environments. Founders of these businesses are often unwilling to listen to advice, collaborate with others, or recognize their own weaknesses. "They unknowingly get themselves, their families, and their businesses in deep trouble fostering cultural patterns that are not amenable to change" (Dyer, 1986, p. 59).

Much has been written about the characteristics of family business leaders (Kets de Vries, 1977; Schein, 1983; Zaleznik, 1977). House (1977) claims that these leaders have "extremely high levels of self confidence, dominance, and a strong conviction in moral righteousness of his/her beliefs" (p. 200). They also effectively role model, create impressions of competence and success, articulate ideological goals, communicate high expectations plus confidence in followers, and generate motive-arousing behaviors. These traits are found in the literature concerning leaders of learning organizations (Bales, 1994; Brooks, 1992; Senge, 1990; Watkins and Marsick, 1996).

However, Dyer (1986) delineates some characteristics of founders of family businesses that may negatively impact their development as learning organizations. In general, he says they tend to distrust other authority figures, be self-reliant, reject advice from others, exercise power in seemingly arbitrary and capricious ways, be secretive about their activities, totally organize and control their business and family activities, be reluctant to delegate to others, develop a philosophy that is followed implicitly, and be portrayed by themselves and others as "larger than life" (p. 61).

Methodology

This is survey research and descriptive and correlational statistics were used to describe current and ideal status among family-run firms in achieving the dimensions of the learning organization. Since there were minor adaptations to the survey to accommodate family business terminology, we tested each scale for reliability and compared these responses to previous results. Table 1 below reports alpha coefficients for each scale for both this sample of family businesses and from previous samples.

Table 1. Scale Reliability Scores

Scale Name	Alpha	Alpha [Family Business]
Continuous Learning	.76	.74
Inquiry & Dialogue	.83	.78
Team Learning	.88	.88
Structures to Capture Learning	.74	.86
Empowerment	.86	.83
Systemic Connections	.86	.76
Provide Leadership	.86	.83
Measuring Results	****[1]	.82

All alpha scores were acceptable, ranging from .74 to .88.

Research question one was answered using one-way analyses of variance and a Tukey-HSD test of significance. Research questions two and three were answered using t-tests. Significance was set at .05.

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[1] This is a new scale so there is no previous reliability score for comparison.

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Data Sources and Evidence

For the purposes of this study, family-run firms were defined as an organization where two or more family members own more than 50 percent of the company and where more than one generation of family members work in the business. These family businesses must also have ten or more employees, annual revenues of $2 million or more, and at least ten years of continuous operation. The majority of the names on this list were selected from the Dun and Bradstreet Directory. Family businesses were identified from this directory by looking for more than one shareholder with the same last name and with shares amounting to more than 50 percent of the total shares. All other criteria were readily identified in this directory. Over 62,000 family businesses were identified using this method by the Family Business Research Center housed at Kennesaw State University. The sample selected for this study is a random sample drawn from among those family businesses whose addresses contain the zip codes found in a 2 hour driving radius of Atlanta, Georgia. This includes family businesses in Georgia, Florida, Tennessee, North and South Carolina, and Alabama.

Research in family businesses is not like research in any other type of organization (Handler, 1989; Levinson, 1983; Ward, 1987). Family businesses are often first and foremost families. By their very nature, families are private entities. Personal information concerning the business is often kept very close to the vest. Ward (1987) concludes that "Gaining access to data about family businesses will always be difficult. Not surprisingly, such companies want to keep information on strategy, financial performance, and family relations private and confidential" (p. 253).

The surveys were distributed to 2,966 family run firms in the United States meeting these criteria. Of these, only 17 were returned as undeliverable as addressed which yielded a final sample size of 2,949. Plagued by low response rates [an average of 8% for solo research efforts such as this, Astrakhan, 1997], family business research requires considerable effort to ensure a usable sample. At this point in this research, 68 surveys have been returned, slightly more than a 2% return rate. Unfortunately, due to delays in mailing, surveys did not go out until the Thanksgiving-Christmas holiday season and arrived near the deadline for return. Subsequently, a postcard encouraged respondents to return the surveys and extended the deadline. Currently, we are resending the survey to a more targeted subsample of the original sample, those 1200 family businesses in the Athens-Atlanta areas. We will use follow-up calls to encourage return of the survey. Additionally, we will ask for a session at an upcoming Family Business Forum at Kennesaw State University and administer the survey there. Therefore, the results to be reported here will be treated as a preliminary pilot run.

Results and Conclusions

Respondents reported that an average of 3.42 family members owned stock while 3.15 family members worked in these family firms. Family members owned an average of 90.29% of all stock. The average size of the businesses represented in this research was 50-99 employees. Average annual revenues were $10-25 million.

Findings for each of the research questions follow.

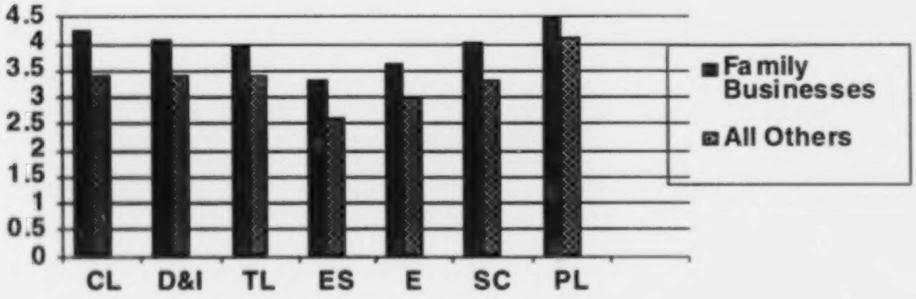
1. *Is there a significant difference across family-run firms [as differentiated by size and annual revenue] on the seven dimensions of the learning organization?*

There is no significant difference based on size on any of the seven dimensions of the learning organization. Annual revenue accounted for a significant difference (p=.05) on only one dimension of the learning organization, "establish systems to capture and share learning." Family businesses with revenues of over $25 million reported a mean on this scale of 22.68 while those with revenue of under $5 million reported a mean of 15.71 and those reporting revenues of $5-25 million reported a mean of 19.93.

2. Is there a significant difference between where the organization is now and where it should be relative to the seven dimensions of the learning organization?

As we would expect with an "is and should be" scale, there were significant differences on all seven dimensions of the learning organization between where family business leaders see their organization at this time and where they believe it should be. This research question enabled us to determine whether or not family business leaders agreed that these were ideal dimensions for their organizations. Figure 1 below depicts a comparison between family business means and mean scores from all previous samples.[2] Family business means are consistently higher. One possible explanation for this is that almost all other respondents were human resource personnel while family business respondents were leaders or owners of their businesses.

Figure 1. Comparison of Family Businesses with Previous Norms



The overall pattern of highs and lows are consistent across the two groups reported here. Both groups scored lowest on "creating systems to capture and share learning" and highest on "providing strategic leadership for learning."

A more in-depth look at high and low scoring items helps to clarify how these family businesses see their organizations' current performance on the dimensions of the learning organization. Table 2 below presents these data.

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[2] Note that this is a six point scale so means appear to be higher than they actually are.

Table 2. High and Low Scoring Items by Dimension

Dimension	Highest Item	Lowest Item
Continuous Learning	"help each other learn." [4.6]	"identify skills they need for future work tasks." [3.4]
Inquiry & Dialogue	"regardless of rank, may ask 'why.'" and also "treat each other with mutual respect."[4.6]	"listen first to others' views before speaking." [3.4]
Team Learning	"expect members to act as equals." [4.2]	"are rewarded on the basis of team achievement." [3.7]
Structures to Capture Learning	"enables people to get needed information at any time quickly and easily." [4.6]	"records its lessons learned so that they are publicly available." [2.6]
Empowerment	"rewards people for taking initiative." [4.3]	"gives people control over the budget needed to accomplish their work." [3.2]
Systemic Connections	"considers the impact of decisions on employee morale." [4.6]	"encourages people to think from a global perspective." [2.9]
Provide Leadership	"leaders generally ensure that the organization's actions are consistent with its values." [4.8]	"leaders generally empower others to implement the organization's vision." [3.9]
Financial Performance	"response time for customer complaints is better than last year."[4.5]	"the cost per business transaction is less than last year." [3.8]
Knowledge Performance	"customer satisfaction is greater than last year." [4.7]	"the number of new products and services is greater than last year." [3.7]

According to the survey, these seven dimensions of the learning organization are present in family run firms. These more specific findings indicate that this sample feels that they have improved their customer responsiveness while their costs have gone up and new development has not. There is less emphasis on empowering strategies for individuals, teams, and systems and greater emphasis on a culture of respect and value congruence.

One of the strengths of family businesses is the familial feeling one has working for this type of firm. This was evident in several of the items on which the sample scored high: questions concerning people helping others to learn, treating others with mutual respect, considering the impact of decisions on morale, and encouraging others to bring customers into the decision process illustrate this trait. Leaders also scored high on ensuring that the organization's actions are consistent with its values. Values are often the glue that holds family businesses together.

Some findings are puzzling given the family business literature. For example, this sample scored high on seeing that people have resources for learning. Yet, learning in family businesses is often reserved for family members. Similarly, this sample said that teams generally expect to function as equals and that individuals are encouraged to ask, "Why?" Typically, family businesses have a culture that discourages non-family members from asking questions about how or why something is done. Also, team dynamics alter drastically when a family member is on the team. Finally, these results suggest that people can get needed information quickly while family business literature suggests that family businesses are often secretive in nature. Some of these inconsistencies may be attributed to the fact that these surveys were completed by family business leaders who may not experience the dynamics noted here.

On the other hand, many of these findings are consistent with family business literature. For example, leaders here reported that they do not listen to others' views before speaking which is consistent with family business leadership literature which emphasizes their self-reliance. Not recording lessons learned so that they are publicly available is consistent with a secretive culture. People may not be given choices in work assignments since work is often organized around family members needs and skills and teams may not be awarded for their achievement due to inequality of rewards which favor family members. Finally, leaders are reluctant to delegate or to empower others to implement the organizational vision. This seems consistent with an entrepreneurial leader who is "larger than life."

3. *Is there a significant difference on where an organization is now on the seven dimensions of the learning organization between high and low financial and knowledge performance family firms?*

Interestingly, financial and knowledge performance did account for significant differences across these family firms. We divided the sample between those firms reporting that their current financial performance when compared to last year was above average [n=36] and those reporting that it was below average [n=28]. *Firms reporting above average financial performance differed significantly on all seven dimensions of the learning organization* as depicted in Table 3 below. In fact, most were significant at the .005 level. All were significant at the .05 level. Means are presented as totals for each scale [highest possible mean is therefore 36].

Table 3. Correlations between firms reporting above and below average financial performance on dimensions of the learning organization

Dimension	Cont. Lrng	Inquiry & Dialogue	Team Learning	Embed-ded Structure	Empow-erment	System Connec-tions	Provide Leader-ship
Below	23.5	23.1	21.5	17.21	18.8	22.6	24.8
Above	26.6	25.6	25.6	21.9	23.9	25.3	28.0

Table 4 below reports a comparison of the means of firms reporting above [n=34] and below [n=30] average performance on the knowledge results variables in this survey. *All differences were significant at the .05 level except the differences between the means of above and below average knowledge performing firms on "providing support for continuous learning."*

Table 4. Correlations between firms reporting above and below average knowledge performance on dimensions of the learning organization

Dimension	Cont. Lrng	Inquiry & Dialogue	Team Learning	Embed-ded Structure	Empow-erment	System Connec-tions	Provide Leader-ship
Below	24.3	23.6	21.8	16.6	19.0	22.4	25.2
Above	26.0	25.3	25.5	22.8	24.0	25.5	27.8

Multiple regression analysis yielded an estimated multiple correlation coefficient of .570 and the R-square was .324. This means that over one-third of the variance in overall organizational performance [both knowledge and financial performance combined] can be explained by the learning organization behaviors measured in this instrument. It is difficult to speculate on the meaning of theses results at this point with such a low response rate. Nevertheless, it is provocative to find that these seven dimensions of the learning organization consistently predict higher overall responses on both financial and knowledge performance variables. Further research will seek to confirm this important finding.

Educational and Scientific Importance of this Study

This study is significant to our understanding of the learning organization because it enables us to begin to track movement across critical dimensions over time and to begin the process of determining norms for this type of business. Future research efforts are focused on whether or not these dimensions consistently correlate with higher financial and knowledge performance results, and to determine differences across types of organizations. Further research on these outcome measures of organizational learning will allow organizations not only to track their progress in implementing the learning organization construct, but also to monitor whether or not their implementation is yielding higher levels of learning and financial performance at the organizational level. Findings from this preliminary study underscore the importance of these learning organization dimensions as predictors of desired organizational performance results.

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Research As Development: Evaluating A Learning Organization Implementation

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This study shares an evaluation of a three-year implementation of a learning organization at Ford Motor Company's Electric and Fuel Handling Division (EFHD). The implementation was evaluated by EFHD employees. Significant evaluation issues included articulating and sustaining shared vision, defining and demonstrating performance in a learning organization, and cultivating learning on both individual and collective levels. The implications of the evaluation will be discussed in terms of the learner, learning process and learning infrastructure.

The learning organization model is being applied as a process to improve organizational performance. Becoming a learning organization involves adopting a holistic, systemic focus (Senge, 1990; Watkins and Marsick, 1993). Companies such as Ford Motor, Coca-Cola, Nortel, Land 0'Lakes, and Johnsonville Foods have documented performance success as a result of such initiatives (Watkins & Marsick, 1996). While the literature on organizational performance in learning organizations is growing, the documented evaluation of such initiatives is less plentiful. This article shares a participant evaluation of a comprehensive learning organization implementation at the Electrical & Fuel Handling Division (EFHD) of Ford Motor Company. EFHD is part of the automotive components industry, one of the largest industries in the world. EFHD supplies starters, alternators, wiper motors, injectors, fuel pumps, cell distributorless ignitions, ignition coils, and throttle bodies to Ford and other automobile manufacturers. Chartered in 1988, EFHD originally managed facilities in Michigan and Indiana. Today, EFHD is a global business with 6,135 employees at facilities in Michigan, Indiana, Ireland, Great Britain, Hungary, China, Japan, and Mexico. The majority of the plants are unionized. Recent sales and profits have shown an unprecedented, dramatic turn around for the business. EFHD attributes a significant part of its resurgence and performance to becoming a learning organization.

Theoretical Framework

The learning organization notion grew out of the discipline of systems thinking. It is an alternative to the Machine Age logic behind workplace design and management. The prevailing Machine Age, or mechanistic model, is founded on the principles of hierarchy, control, fragmentation and reductionism. The mechanistic model offers most employees, with the exception of managers and professionals, little control over their workplace activities. Jarvis (1992) emphasizes that, "In this organizational and technological world of work individuals learn to become divided selves and to cope with life. . . .Learning how to fit in is a non-reflective learning process" (Jarvis, 1992, p. 180). There are few rewards in the workplace of today for admitting, "I don't know," or "I need help," or "I might be wrong." Instead, employees are rewarded for competing against each other, having the right answers and moving quickly in moments of crisis, often not taking time to reflect on the consequences of their decisions or actions.

Senge regards the Systems Age as, "a worldwide, fundamental shift in management philosophy and practice" (1993, p. 5). The systems perspective recognizes that seeking organizational control is futile. Instead, systems thinkers pursue prediction based on patterns and behaviors over time, recognize that natural systems are self-organizing and that order evolves from disorderly, chaotic processes. Harnessing workplace learning has been suggested as an answer to shifting from the Machine Age to the Systems Age perspective, and interest is growing

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in the application and evaluation of workplace learning. Essentially, making this shift calls for new models of management.

The current design of work and the development processes are not only mechanistic, but also insensitive to adult learning and development across the lifespan. Merriam and Caffarella observe that, "Learning in adulthood is an intensely personal activity" (1991, p. xi). Yet, organizations function to organize, control and often constrain workplace development. Merriam and Caffarella also estimate that 90 percent of the population is involved with at least one self-directed learning activity a year (1991, p. 54), and Marsick and Watkins (1990) observe that much of the learning in the workplace is either incidental or unintended. What is known about adults as self-directed learners is that they need personal autonomy, they have the willingness and ability to manage their own learning, they need a context that gives them control over their learning, and they meet learning goals without the use of formal institutions or methods (Candy, 1991). In spite of this, much of the development that occurs in the workplace is formal, productivity based, and fragmented. Managers who believe that employees are motivated only to serve the corporate interest are missing the opportunity to capture the inherent energy and enthusiasm that adults bring to their personal learning.

The essence of the learning organization is to capture, share and facilitate the learning that is naturally occurring in the organization. The EFHD story provides an outstanding model and practice for effectively implementing a learning organization.

Learning Organization: EFHD's Strategic Imperative

EFHD embraced Peter Senge's model from the 1990 book *The Fifth Discipline* as a framework for implementing the learning organization process. EFHD believes that the key to becoming a best-in-class, high performing organization lies in their ability to learn faster and more effectively than the competition. EFHD has designed plans to improve both work and interpersonal processes in this quest. EFHD's Vision states, "As a Learning Organization, we will generate a high level of customer satisfaction by providing subsystems, products, and services with best-in-class quality and best-in-class costs." EFHD's goal is to achieve maximum organizational performance through learning. Intended results include: learn faster than the competition, achieve maximum value and zero waste, optimize knowledge *and* understanding, and use energy to be a best-in-class producer (rather than fighting political battles). EFHD's Strategic Initiative proposes, "To be an organization that fosters the five disciplines of the Learning Organization; specifically, Systems Thinking, Personal Mastery, Shared Vision, Team Learning, and Mental Models" (for definition of the disciplines see Senge, 1990). EFHD has worked to create an infrastructure supportive of learning. The infrastructure is designed to create and sustain the learning organization process and incorporates: cultivating a supportive culture, promoting learning organization awareness, building capacity and involvement, and adopting a community focus.

EFHD began the learning organization initiative in 1992 with the formation of the Product Launch Success Team, chartered to create high performance launch processes of new and current product lines. Simultaneously, the executive management (Division Operating Committee) began its efforts to create a culture based on team learning and shared vision. Although becoming a learning organization is a strategic imperative of EFHD, participation in the process is entirely voluntary. Today, there are 30 active team learning projects involving 1200 EFHD employees.

Research Questions

The purpose of this study was to evaluate the implementation of a learning organization at EFHD using the company's learning model and systems dynamics tools. Guiding questions included: 1) What sustains the process? 2) What prevents the effective implementation of a learning organization process? and 3) What are the results of implementation beyond obvious performance improvements?

Methodology

A unique qualitative approach was used that applied the EFHD learning model as a framework for data collection and analysis. Data were collected over a three year period from 1993-1996. Participants were a globally and hierarchically diverse sample of EFHD employees who voluntarily participated in a sixty-hour introductory course on the theory and practice of the learning organization. Data were collected through over 500 hours of participant observation in both training and work settings, using semi-structured post-training interviews with 25 employees, written surveys, electronic mail, journals, dialogue meetings, and two sessions to evaluate the process using systems dynamics tools and the EFHD learning model involving 20 employees.

This study is the last arm of a three year qualitative evaluation of the implementation at EFHD. It focuses on the employee evaluation of the process using EFHD's learning organization model and tools. This distinct approach applied the EFHD learning model as a framework for data collection and analysis. Participants in the study participated both by providing and analyzing data. Two separate employee groups participated representing a cross section of the workforce. Twenty employees participated in the process.

The Learning Model, now used in all EFHD learning projects, was developed by the Product Launch Success Team. The EFHD learning model follows six basic steps:

|--> 1. Provide Process
| 2. Dialogue
| 3. Generate Issues
| 4. Determine Critical Clusters (issues)
| 5. Action
|__ 6. Determine Success

In a large organization it is difficult to share lessons learned. Because of time constraints and constant personnel churning, procedures are rarely written, which results in repeated errors. The EFHD organizational learning model emphasizes shared learning by developing and documenting processes, policies, and stories. The learning model follows these steps: It *provides processes* for capturing learning which is the purpose of the model. The next step is *active reflection* about work related problems and visions through a process of *dialogue*. Once the *issues* are *generated*, they are *clustered* by similarity. Finally, *actions* and decisions can be generated from the critical clusters. All this information is recorded and owned by the team. The final step in the process is to *determine success* and repeat the cycle. The model is circular representing a continuous loop of learning that can be begun at any point (Bierema & Berdish, 1996a).

This tool, grounded in systems thinking, is used to reveal patterns that may not be obvious in day-to-day operations of the organization. Systems thinking is concerned with understanding the interrelationships of variables within the system and the patterns and structures that support them. Senge et al (1993) note that the linking concept among the prevailing systems theorists of today is, "that behavior of all systems follows certain common principles" (p. 89). The models provided through "systems dynamics" originally developed by Jay Forrester, at MIT, provide tools useful for analyzing systems behavior. Systems laws and principles can be observed and learned. Learning how to work with the structures at play in the organizational system is important in a learning organization.

Data were analyzed using the constant-comparative technique. Data were organized into themes using the systems dynamics tools of hexagons (Idon, 1992) and causal loops (Brassard, 1989). Trustworthiness of the data was verified through the use of multiple data sources, member checks, and longitudinal data collection. EFHD employees also assisted in the data analysis process.

Results and Conclusions

The 1996 Study EFHD's performance results since efforts began to create a learning organization are impressive. Key areas of performance improvement include: a dramatic financial turnaround, improved employee attitude surveys, company leadership in achieving total productive maintenance checkpoints, and new product launches that exceed budget objectives in quality, costs, and timing. The Product Launch Success Team (PLST) is just one example of how a team with the formidable task of launching an new automotive system used the learning organization process to radically improve every aspect of the product launch process. The work of the PLST has become a benchmark for other learning teams.

The goal of an earlier study (Bierema & Berdish, 1996b), was to probe beyond performance measures and understand results from a learning perspective in terms of how employees evaluated their learning and how they assessed organizational learning. These results indicate that the nature of the learning was multifaceted. The study found significant individual learning on personal levels (outside work, with families and civic organizations), interpersonal levels (relationships with other people both inside and outside work), and professional development levels (enhancing work-related skills). Learning on a collective level was also identified being significant in terms of how employees communicated and learned together and the impact this learning through dialogue had on the organization. At the organization-level, the theory and tools of the learning organization were being applied to EFHD team projects and problem solving. There was an increase in self-directed learning projects that participants felt were inspired by the learning organization process. Participants also reported having a new more systems-oriented, big-picture, long term focus. The study also identified the key impediments to the learning organization as: management support, peer support and resources.

The Employee Systems Evaluation Eleven clusters of EFHD learning organization evaluation were identified by the two employee groups. A content analysis was done on the clusters to distill the key patterns among the clusters. Three categories emerged from the causal loop and content analysis of the clusters: Shared vision, performance, and learning. Each will be discussed. The hexagon categories are listed in the following table.

Shared Vision	**Performance**	**Learning**
Tensions	Tensions	Tensions
Awareness	Actions	Dialogue—skill set
Mixed Messages	Dialogue +/-	Mixed Messages
Sustaining Process	Leftovers	Better Sex
	Mixed messages	Sustaining Process

Shared Vision. Cultivating a shared sense of vision is a key aspect of creating a learning organization. Upon evaluation, participants had mixed feelings on how well this component of becoming a learning organization was met. Their concerns related to articulating, sustaining and advancing the vision of becoming a learning organization. In terms of articulating the vision, they felt that the EFHD definition of a learning organization was still foggy. There was also a sense that inconsistent views about what the vision was were held in the organization. A question was raised about what the business plan said about learning organizations and how it impacted daily functioning.

There was also concern about sustaining the vision in the midst of a challenging competitive environment with competing demands on employees' time. The participants felt that a marketing campaign was needed to remind people about the vision and definitions. It was also suggested that the learning organization principles and tools needed to be resurrected at regular meetings. Hourly personnel's access to the vision was also of concern based on the reality that those employees have less control over their schedule and ability to leave their work stations to learn about and practice learning organization techniques. There was also a deep sense of disappointment that learning organization follow-up had not been more comprehensive and consistent. This disappointment was not fueled by anger, but by a sense of lost opportunity to advance the learning organization understanding and process.

There was also great interest in how the learning organization process would advance beyond the introductory training and learning teams that had been established. The future plan was unclear to the participants. There was a sense that EFHD was the only division in Ford applying this process, that they were an island, and that the process would not go further. Although the vision aspect did confuse employees on some levels, the experience of participating in the introductory course and learning teams resulted in a high level of enthusiasm and willingness to work on moving the process forward.

Performance. The notion of performance raised several concerns in the systems evaluation of the process. There was anxiety related to the tension between meeting production demands while applying learning organization standards of behavior in the organization. Employees also felt at a loss or powerless when it came to resolving this tension. There was frustration that short term reactiveness to productivity issues conflicted with the long term systemic orientation of the learning organization vision. There was also a sense that some actions in the organization were inconsistent with learning organization values. For instance the culture was more oriented toward reacting and responding to crises in the heat of the moment, versus creating more proactive structures that prevented such behavior patterns in the system.

There were mixed reviews with how well the organization performed when it applied the learning organization process and tools. The most visible tool was dialogue. There were reports of dialogue that worked both well and poorly. Although the employees gave the organization's use of dialogue an average assessment, it was regarded as a powerful tool and the most visible evidence that the learning organization offered a new structure that could be a more effective way of attaining results.

Understanding what performance means in a learning organization is a source of tension. Is it high productivity? High quality? Open, honest communication? Superior learning? Knowledge advocacy? Admitting "I don't know?" All of these? Some of these? None of these? These questions nagged the participants in the hexagon sessions.

Learning. Learning as a result of the learning organization process was the most positive, often unexpected outcome of the process. The learning was especially significant on an individual level with significant reporting of self-directed learning projects related to the learning organization implementation.

The employees raised issues related to learning on both individual and team levels. The most often cited learning experience on the individual and team level was learning and practicing the technique of dialogue. While not without its challenges, the dialogue process was regarded as a useful tool when used correctly. The participants felt exicted about using dialogue initally, but when the process broke down they were less inclined to use it. Upon reflection, the participants felt that they should have pushed using the dialogue process harder when it broke down, rather than stopping the process.

Participants were aware of forces that prevented them from learning such as time pressures, organizational politics, non-supportive supervisors/colleagues, confusion over the process, and lack of application opportunities. Time pressures were blamed with interfering with learning on both levels. While dialogue was an important learning, it was also the skill that participants felt needed more cultivating.

There were also unexpected benefits or unintended consequences of the organization's quest to become a learning organization. Participants cited improved family relationships, better ability to communicate, clearer focus on personal goals, new perspectives on old problems, and improved teamwork.

Implications

What can be learned from EFHD's experience? EFHD has continuously learned as it has led the way in learning organization implementation in both Ford Motor Company and U.S.

manufacturing. As there are no recipes for creating a learning organization, EFHD's has applied its lessons to continually structure and redesign learning organization processes.

Earlier research on the EFHD implementation revealed that the key variables responsible for success were rooted in fostering individual and team learning while creating an infrastructure supportive of both learning and practice. The 1997 evaluation suggests that the EFHD infrastructure needs fine-tuning in the areas of creating shared vision, specifying and demonstrating performance objectives in the context of a learning organization, and continuing the facilitation, capturing and sharing of learning on both individual and collective levels. Further, these opportunities for improvement must be considered in terms of the learners, learning processes and learning infrastructure in the EFHD system.

The employee evaluation raises issues that deserve attention, but also celebration. This process is valuable as a model of learning organization evaluation. It also perpetuates the EFHD learning model by using the learning model to create new knowledge about the learning organization process. Through the process, EFHD has promoted employee development, created an evaluation and practiced the tools of the process. The implications of the employee evaluation will be discussed in terms of the EFHD learners, learning processes and infrastructure.

Learners Just as adult educators function as enablers of learning, so too must organizational leaders act to facilitate the learning process in a learning organization. This challenge involves supporting learner needs in the organization. Adults bring a natural tendency to learn to the workplace. Knowles (1990) in his theory of andragogy—the art and practice of facilitating adult learning—suggested that adult learners: value learning the subject under study, are self-directed, rely on previous experience, value learning that meets a present need or goal, are life-centered as opposed to content-centered, and have a high degree of intrinsic motivation to learn.

The EFHD experience has demonstrated that the employees value the learning organization process and see its usefulness not only at work, but in life. Further, the EFHD experience documents that the learning organization process has motivated significant number self-directed learning projects (Bierema & Berdish, 1996b). Organizations attempting to become learning organizations will benefit by understanding and catering to adult learners.

The next challenge is to expand the facilitation of the adult learning that is already occurring in the organization. The essence of the learning organization is to cultivate (not smother) the natural adult tendency to be self-directed and intrinsically motivated in their learning. The learning must also be explicitly connected to personal and organizational vision.

Learning Process At EFHD, sharing stories and distilling learning from them is an explicit goal of becoming a learning organization. EFHD created its learning model to foster this exchange. The stories then can be taken to a higher level when systems dynamics tools of analysis are applied to them, as was done in this study. This analysis involves understanding events, patterns, structure and mental models at play in the organizational system. Events are isolated occurrences of problems, conflicts, breakdowns and successes that in and of themselves don't tell us very much about the system. The problem is however, that huge amounts of energy and time are expended reacting to events. This behavior is often called fighting fires. Several events strung together often show a pattern of behavior over time. The pattern may be virtuous or vicious. It is a pattern nonetheless. Structure is an entity made up of patterns repeated over time. These patterns often go unquestioned in organizational life. Mental models are the assumptions that guide the beliefs and behaviors of the members of a system.

EFHD has created a structure for learning: the learning model. The issue that employees repeatedly raised was that inconsistent application of the model was hurting the process. The model provides a new, more effective structure for sharing and capturing learning in the organization. However, if the model is not applied, the customary structures for problem solving, learning, and decision making prevail. Not only must the learning model be better applied, but the structures operating preventing its more global use must be understood.

Dixon observes:

> If an organization intends to make maximum use of its learning capability then it is critical that the assumptions it makes about learning facilitate that direction. To do that the tacit assumptions that are a part of the collective meaning structure must again become a part of the accessible meaning structures of the organization so that they may be openly discussed and consciously chosen (1994, p. 127).

EFHD's current process is to apply the learning model in a haphazard fashion. At the root of the issue is the practice of single versus double loop learning at EFHD. Argyris concludes that most organizational learning is single loop, and breaking out of that cycle to a double loop process is difficult. Single-loop learning according to Argyris, occurs when organizational errors are discovered and corrected without questioning or altering the underlying values of the system. He suggests that this phenomenon occurs on individual, group, intergroup, organizational, or interorganizational levels. He defines double-loop learning as occurring when mismatches are corrected by first examining and altering the governing variables and then the actions. Argyris (1992) contends that most organizations, often unconsciously, create learning systems that suppress double-loop inquiry, making it problematic for even well designed information systems to be effective. This phenomenon appears to be impacting EFHD. Brookfield (1986) notes that an important learning skill is to become aware of idiosyncratic learning styles. In essence, this demands new structures for learning. Yet, the pattern of learning is difficult to change. Double loop learning cannot happen without changing the models of organizational structures and processes presently existing. The EFHD application of the learning model—which incorporates double loop learning—is inconsistent. To move the process to the next level, the learning infrastructure will require further attention to help ensure a more global and consistent application of the learning organization process. Watkins and Marsick (1996) conclude that learning organizations must: cultivate a learning habit in people, regularly audit the knowledge capital, and embed a learning infrastructure. EFHD has done this. The current task is to fine-tune the learning infrastructure that has been created.

Infrastructure Argyris notes that, "Organizations learn through individuals acting as agents for them. The individuals' learning activities, in turn, are facilitated or inhibited by an ecological system that may be called an organizational learning system" (1992, p. 123). The "ecological system," or infrastructure at EHFD oscillates between the facilitation and inhibition of learning. A system that oscillates can quickly neutralize change efforts.

When a structure is not working well there is tension. When a structure is challenged, there is more tension, as the immediate reaction is resistance to the change. Fritz eloquently observes that organizational change efforts rarely result in change because, "Change has been imposed on top of inadequate existing structures" (1996, p. xiii). There are fundamental structural principles that most physical structures are constructed according to. Yet, the idea of structural integrity has not transferred to organizational design or management. Some of the issues raised on the EFHD evaluation point to the structure issue.

From a structural perspective, it is important that EFHD employees and leaders focus not on short term events such as the learning organization course, enthusiasm, poor and effective instances of management support, isolated team failures and successes, but rather, focus its attention on the patterns, structures and mental models that are both facilitating and restraining EFHD's progress. The dialogue process stands out as a significant symbol of creating new structure that has delivered positive results. The dialogue process needs strengthening and other similar tools need to be applied.

The infrastructure is where EFHD has leverage. Surfacing and challenging the individual and collective mental models about what it means to be an automotive company, local employer, player in the global economy, *and* a learning organization are critical to EFHD's continued development as a learning organization. There is oscillation on the issues of shared vision and performance, that while not hurting the company are putting it into a neutral pattern of moving forward, then backward. The task is to use the tensions to propel movement toward the vision, not distract from it. There is a significant amoung of energy in the individual and collective learning processes at EFHD. Continued refinement and use of the learning model is imperative for continued development as a learning organization.

The EFHD experience is a significant one for those interested in the pros and cons of LO implementation. As previously stated, the Ford experience demonstrates clear, measurable performance gains from this process. The objective of the participant evaluation was to look at less tangible issues such as learning and application of the process. This study is not without its limitations. Approximately one fifth of the division's 6000 employees, worldwide, have participated in the learning organization process to date. It is a qualitative study, thus, our goal was not to survey hundreds of participants, but rather to gain a perspective on how a representative group of employees is using (not using) the process.

The EFHD experience offers a glimpse of the trials and tribulations of becoming a learning organization. Learning organizations have the advantage of turning their learning upon themselves in an effort to improve their process and structure. EFHD offers a model of not only becoming a learning organization, but applying the process toward moving learning to the next level.

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Determining the Labor Demand and Development Needs of HR/HRD Professionals in China

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This article summarizes results of a 1996 survey of 20 multinational corporations in China. Labor demand for HR generalists in the respondents' organizations is expected to increase by 164% over current staffing during the next 5 years, HR specialists to increase by 542%, HRD generalists to increase by 426% and HRD specialists to increase by 253%.. Respondents identified 10 key topics for inclusion in academic programs geared to HR and HRD practitioners in China now and in 5 years.

"If China can sustain its current economic momentum, and there is little reason to believe that it cannot" writes John Naisbitt (1994), " by the year 2000 it will be the world's biggest economy. Bigger than the United States, bigger than Japan. In time, China's economy could be bigger than the combined economies of all of today's rich industrial economies" (p. 234). Indeed, "China is already the world's third-largest economy, surpassing Germany, trailing only the United States and Japan" (Naisbitt, 1994, p. 234).

Key to China's sustained growth is improved utilization of the human resource with which it is blessed in superabundance. Unfortunately, China still retains the trappings of a planned economy, which complicates efforts to manage and develop human resources in ways that are both sensitive to Chinese culture and that apply state-of-the-art human resource management (HR) and human resource development (HRD) practices learned from Western experience. Lacking effective human resource management and development, the Chinese will not be able to build on the strategic strength supplied to them by their human resources. To complicate matters, little research has been conducted on the competencies required of HR or HRD professionals in the People's Republic of China (PRC). What little has been done has focused on the culture-specific HRD competencies required of HRD professionals on Taiwan (Lee & Rothwell, 1995).

But what is the labor supply of HR and HRD workers in 20 multinational corporations doing business in the PRC? What is the labor demand for HR and HRD workers in those organizations over the next 5 years? and what topics or competencies should be addressed by an academic HR or HRD program in the PRC to meet the needs of the HR and HRD workers in the respondents' organizations? To investigate these general questions, the author of this paper made 2 trips to the PRC in 1996 and conducted a survey of selected multinational corporations doing business there. On both trips the author met with representatives of the multinational corporations to discuss an academic HR/HRD program established under the sponsorship of the corporations and in formal partnership with 2 Chinese universities. A needs assessment survey was conducted as a result of the first meeting with 32 representatives of 22 multinational corporations. Mailed in October 1996, the survey yielded a response rate of 91%--with 20 of the 22 corporations responding. The results of this descriptive and exploratory survey, while limited by a small sample size and a nonrandom sample, shed light on the current supply of HR and HRD professionals in the respondents' organizations, expected demand over the next 5 years and desired topics to be addressed by academic curricula for HR and HRD practitioners in the PRC over the next 5 years.

This paper summarizes the results of the study. It describes the research questions guiding the study, the research methodology, the study's major findings, and issues for future investigation.

Research Questions

The study goals focused around answering such questions as these: (1) What kind of HR professionals were employed by the respondents' organizations in the PRC? (2) What percentages of HR professionals

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in the respondents' organizations were obtained from inside and outside the PRC? (3) What kind of HR professionals did the respondents estimate that their organizations would employ in the PRC in 5 years? (4) What percentages of HR professionals did the respondents expect to obtain from inside and outside the PRC over the next 5 years? (5) What topics/competencies did the respondents perceive to be most important for HR/HRD practitioners in the respondents' organizations now? (6) What topics/competencies did the respondents expect to become most important for HR/HRD practitioners in the respondents' organizations over the next 5 years? (7) What did the respondents perceive to be the top 3 present priorities for preparing HR and HRD professionals in their organizations? (8) What did the respondents perceive to be the top 3 priorities for preparing HR and HRD professionals over the next 5 years? and (9) How willing were the respondents to participate in paid and unpaid internships for students in HR/HRD/instructional design?

Research Methodology

The researcher began the study by drafting a 10-item survey to address the research questions listed above. The questions were based on issues raised in the initial meeting with the 32 representatives of the 22 corporations. One Training Director in the PRC reviewed the survey prior to mailing. The researcher revised and shortened the survey based on the reviewer's recommendations.

How Was The Survey Conducted? In October 1996 the questionnaire was mailed to identified representatives of 22 multinational corporations that participated in an August 19, 1996 meeting, held in Beijing, about the academic preparation of HR and HRD practitioners in China. One company representative served as local sponsor and made repeated phone calls and electronic mail follow-up messages to increase the response rate. No effort was made to ensure that respondents consisted solely of HRD professionals, since the August 19, 1996 meeting revealed the possible need for 4 different types of HR or HRD professionals. A follow-up meeting with the representatives was held in November 1996.

Limitations of The Survey. This study was limited by (1) a small sample size; (2) possible systematic bias resulting from the choice of organizations responding, since multinational corporations may engage in practices different from joint venture companies and/or Chinese-owned organizations; and (3) no follow up with the 2 nonrespondents. Given the study's limitations, the results cannot be generalized beyond the respondent group.

Major Findings

Although the response rate was 91%, not all respondents answered every question. Hence, response rates vary by item. This section reports on the demographic information about the respondents and summarizes the study's major findings.

Who Were the Respondents? Of the 18 respondents who indicated the industry in which their organization was classified, 7 (39%) represented manufacturing. Six respondents (33%) marked "another industry," 4 (22%) marked "transportation, communication, electric, gas," and 1 (6%) marked "other services." Respondents who marked "another industry" were asked to specify. Five respondents did so, listing "information technology," "fast food restaurant," "natural resources marketing/development," "information," and "highly-diversified business."

Of the 18 respondents who indicated the number of people employed by their organizations, 6(33%) indicated their organizations employed between 500-1999 workers; 3(17%) marked 100-249, 3(17%) marked 250-499, 2 (11%) marked 0-99, 2 (11%) marked 2000-4999, and 2 (11%) marked 5000 or more.

Of the 18 respondents providing information about their job functions, 7(39%) indicated that they were" human resource professionals *with* responsibility for recruiting/hiring staff in China," 5(28%) marked "other," 4(22%) marked "human resource professionals *without* responsibility for recruiting/hiring staff in China," and 2(11%) marked "operating manager *with* responsibility for recruiting/hiring human resource staff in China."

Questions 1 and 2: What Kind of HR Professionals Were Currently Employed by the

Respondents' Organizations in the PRC, and What Percentages of HR Professionals in the Respondents' Organizations Were Obtained from Inside and Outside the PRC? Respondents were asked to indicate the current employment pattern of HR/HRD professionals in their organizations as well as to estimate the percentage of professionals obtained from inside and outside China. They were then presented with a list of 4 possible job categories and blank spaces in which to insert numbers and percentages. The survey results, presented in Table 1, show that respondents collectively employ 124 HR generalists, 19 HR specialists, 19 HRD generalists and 19 HRD specialists at present. Most HR and HRD talent has been hired from inside China, according to the respondents. One notable exception: the HRD specialist job category, with only 25% hired from inside China.

Questions 3 and 4: What Kind of HR Professionals Did the Respondents Estimate That Their Organizations Would Employ in the PRC in 5 Years, and What Percentages of HR Professionals Did the Respondents Expect to Obtain from Inside and Outside the PRC Over the Next 5 years? Respondents were asked to estimate the expected employment pattern of HR/HRD professionals in their organizations at the end of 5 years in the future and the percentage of professionals obtained from inside and outside China at the end of the same time. They were then presented with a list of 4 possible job categories and blank spaces in which to insert numbers and percentages. The survey results, summarized in Table 2, show that respondents collectively expect to employ 203 HR generalists, 103 HR specialists, 81 HRD generalists and 48 HRD specialists in 5 years. That represents an expected growth rate over 5 years of 164% in the HR generalist job category , 542% in the HR specialist job category, 426% in the HRD generalist job category, and 253% in the HRD specialist job category. The respondents expect about 80% of all HR and HRD talent will be hired from inside China.

Questions 5 and 6: What Topics/Competencies Did the Respondents Perceive to Be Most Important For HR/HRD Practitioners in the Respondents' Organizations Now, and What Topics/Competencies Did the Respondents Expect to Become Most Important for HR/HRD Practitioners in the Respondents' Organizations Over the Next 5 Years? The respondents were presented with a list of 17 topical issues/competencies and were asked rate them on a scale from 1 (*not important*) to 4 (*very important*). The survey results, presented in Table 3, reveal that respondents perceive 10 topics/competencies to be most important for HR/HRD professionals now and ten topics/competencies to be most important for HR/HRD professionals 5 years in the future.

Questions 7 and 8: What Did the Respondents Perceive to Be the Top 3 Present Priorities for Preparing HR and HRD Professionals in Their Organizations, and What Did the Respondents Perceive to Be the Top 3 Priorities for Preparing HR and HRD Professionals Over the Next 5 Years? Respondents were asked to list the top three present priorities for preparing HR and HRD professionals based on their organizations' current needs. That item elicited 1 page of responses, which are provided verbatim in Table 4. Respondents were also asked to list the top three priorities for preparing HR and HRD professionals over the next 5 years based on their organizations' expected needs. Verbatim responses to that item are provided in Table 5.

Question 9: How Willing Were the Respondents to Participate in Paid and Unpaid Internships for Students in HR/HRD/Instructional Design? Respondents were asked to indicate whether their organizations would be willing to participate in paid or unpaid internships for students in HR/HRD/instructional design and would be willing to hire graduates "provided they met the organization's requirements and vacancies were available." Of 14 respondents answering the first question, 11(79%) indicated that they would be willing to participate in paid internships. Of the 16 respondents answering the second question, 14(88%) expressed a willingness to participate in unpaid internships. Finally, of the 17 respondents answering the third question, 16(94%) indicated a willingness to hire graduates of an HR/HRD program, "provided they met the organization's requirements and vacancies were available." (The one respondent who answered "no" to the last item indicated that "other credentials are considered more important [than academic credentials in HR/HRD].")

Issues for Future Investigation

Here are some recommendations for future research based on this study, in no particular order of importace:

Table 1: HR/HRD Professionals Currently Employed in China By Respondents' Organizations

Kind of HR/HRD Professional Currently Employed in China	How Many Does Your Organization Currently Employ? *(Insert number in box below.)*	Estimate Percentage of Professionals Obtained from Inside and Outside China	
If none, insert "0" in the columns at right		***% from Outside China***	***% from Inside China***
Human resource management (personnel) professionals *with a generalist background*	N = 19 Total = 124 Mean = 6 Std. Dev. = 9.8 Var. = 96.9 Max = 45 Min = 0	N = 16 Mean = 37.6 Std. Dev.= 32.6	N = 16 Mean = 62.4 Std. Dev.= 32.6
Human resource management (personnel) professionals *with specialization* (such as compensation, benefits, etc.)	N = 19 Total = 26 Mean = 1.4 Std. Dev. = 1.9 Var. = 3.7 Max = 6 Min = 0	N = 9 Mean = 35.9 Std. Dev. = 41.2	N = 9 Mean = 64.1 Std. Dev.= 41.2
Human resource development (training) professionals *with a generalist background*	N = 19 Total = 28.5 Mean = 1.5 Std. Dev. = 1.5 Var. = 2.25 Max. = 6 Min. = 0	N = 14 Mean = 33.1 Std. Dev. = 37.6	N = 14 Mean = 66.9 Std. Dev. = 37.6
Human resource development (training) professionals *with specialization* (instructional design ability)	N = 19 Total = 8 Mean = 0.4 Std. Dev. = 0.6 Var. = 0.4 Max. = 2 Min. = 0	N = 7 Mean = 75 Std. Dev. = 43.3	N = 7 Mean = 25 Std. Dev. = 43.3

- What is the current supply of HR and HRD professionals in Chinese-owned businesses in the PRC, and how does it compare to that of multinational corporations?
- What cultural differences and similarities exist among effective HR and HRD practices in Western nations and in the PRC?

Conclusion

Few can dispute that globalization is a driving force in today's organizations. China is one of the most dynamic economies in the world today. HR and HRD professionals would be well-advised to pay

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Table 2: HR/HRD Professionals Expected To Be Employed in China By Respondents' Organizations At End of Next 5 Years

Kind of HR/HRD Professional in China	How Many Does Your Organization Expect To Employ at End of 5 Years in the Future *(Insert best guess estimate in box below.)*	Estimate Percentage of Professionals Obtained from Inside and Outside China	
If none, insert "0" in the columns at right		*% from Outside China*	*% from Inside China*
Human resource management (personnel) professionals with a generalist background	N = 20 Total = 203 Mean = 10.2 Std. Dev. = 15.2 Var. = 229.6 Max. = 60 Min. = 0	N = 14 Mean = 14.3 Std. Dev. = 26.7	N = 14 Mean = 85.7 Std. Dev. = 26.7
Human resource management (personnel) professionals with specialization (such as compensation, benefits, etc.)	N = 20 Total = 103 Mean = 5.2 Std. Dev. = 13.1 Var. = 172.6 Max. = 60 Min. = 0	N = 15 Mean = 19.7 Std. Dev. = 38	N = 15 Mean = 80.3 Std. Dev. = 38
Human resource development (training) professionals with a generalist background	N = 20 Total = 81 Mean = 4.1 Std. Dev. = 5.1 Var. = 26.1 Max. = 20 Min. = 0	N = 12 Mean = 13.1 Std. Dev. = 28.7	N = 12 Mean = 86.9 Std. Dev. = 28.7
Human resource development (training) professionals with specialization (instructional design ability)	N = 20 Total = 48 Mean = 2.4 Std. Dev. = 3.6 Var. = 13.1 Max. = 15 Min. = 0	N = 12 Mean = 19.2 Std. Dev. = 33.5	N = 12 Mean = 80.8 Std. Dev. = 33.5

attention to growth opportunities in the PRC while remaining sensitive to the differences created by a culture and transitioning economy that are quite different from what has been traditionally found in the West. Although this paper describes the results of a limited study, more intensive research should be directed to identifying and examining the labor supply, labor demand and requisite competencies for success in HR and HRD in the PRC.

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Table 3: Topics/Competencies of Importance for HR/HRD Professionals in the PRC At Present and At The End of Next 5 Years

Topics/Competencies Important NOW					**Topics/Competencies Important At End of Next 5 Years**				
Topics	Rank	N =	Mean	Std. Dev.	Topics	Rank	N =	Mean	Std. Dev.
Recruiting employees	1	17	3.53	0.62	Analyzing performance problems	1	20	3.85	0.37
Analyzing training needs	2	20	3.3	0.66	Analyzing training needs	2	20	3.8	0.41
Selecting employees	3	17	3.29	0.69	Selecting employees	3	17	3.53	0.51
Compensating employees	4	17	3.24	0.75	Benefits Planning	4	17	3.51	0.62
Analyzing performance problems	5	20	3.1	0.85	Compensating employees	5	17	3.47	0.51
Orienting employees	6	17	3.06	0.75	Roles of HR/HRD	6	20	3.4	0.68
Benefits Planning	7	17	3	0.71	Helping a group establish change plans	7	20	3.4	0.75
Roles of HR/HRD	8	20	2.9	0.91	Helping a group implement an action plan	8	20	3.39	0.7
Delivering instruction	9	20	2.8	1.11	Recruiting employees	9	17	3.35	0.61
Helping a group implement an action plan	10	18	2.72	0.83	Orienting employees	10	17	3.24	0.75

Table 4: Respondents' Perceptions of the Top Three Present Priorities for Preparing HR and HRD Professionals Based on Their Organizations' Current Needs

Priority Rank NOW	Verbatim Comments by Survey Respondents
1 (*Most Important*)	■ Compensation program design and communication ■ Business oriented HR ■ Hiring quality person ■ Interviewing and selection of employees ■ Identification of HR roles and responsibilities ■ Structure/functions of HR/HRD ■ Designing/developing instructional materials ■ Analyzing performance problems so that improvement can be made ■ Partnership with business ■ Organization Development ■ Performance consulting for individuals ■ Roles of HR and HRD professionals ■ Recruitment ■ "It's not easy to find a qualified person for the position"
2	■ Understand training needs and design programs ■ Managing performance ■ Training staffs to meet the need of competency development ■ Performance review and management ■ Pro-active, high self-initiative in performance ■ Analyzing training needs ■ Recruiting employees ■ Delivering instruction so that the employees can implement it well ■ Organizational change ■ Retention [*can't read that word for sure*] ■ Education measurement ■ Analyzing training needs ■ Training ■ "Continue to improve the employees' abilities"
3	■ Recruiting and selecting workforce ■ Training & development ■ Make the B & G [*can't read*] more competitive ■ Training management ■ Problem-solving ■ Delivering instruction ■ Analyzing training needs ■ Health and safety can increase the production ■ Consulting skills ■ IT in HR ■ Instructional design ■ Analyzing performance problems ■ Compensation ■ "Find the problems and solve it"

Table 5: Respondents' Perceptions of the Top Three Priorities in 5 Years for Preparing HR and HRD Professionals Based on Their Organizations' Needs

Priority Rank OVER NEXT 5 YEARS	Verbatim Comments by Survey Respondents
1 (*Most Important*)	■ Help business to develop and execute an action plan ■ Training & development ■ To build the first choice employer image ■ Training management ■ Coaching skills ■ Helping a group establish a change plan ■ Helping a group establish a change plan ■ Analyzing performance problems so that improvement can be made ■ Performance consulting ■ Organization Development ■ Performance consulting for organizations ■ Analyzing performance problems ■ Performance management ■ "Recruiting the most suitable person to the group is always the most important"
2	■ Deliver good training/development program ■ Managing performance ■ To tap the channels of potentials ■ Management development ■ Team building ■ Analyzing performance problems ■ Analyzing performance problems ■ Delivering instruction so that the employees can implement it well ■ Reengineering of HR functions ■ IT in HR ■ Instructional system design ■ Evaluating instruction ■ Compensation ■ "Improving the employees' abilities should be put on the top of the others"
3	■ Deliver competitive/affordable comp/benefit program ■ Business-oriented HR ■ To become an enterprise with sustained growth ■ Succession planning ■ Career planning and developing ■ Roles of HR/HRD programs ■ Designing and developing instructional materials ■ Health and safety can increase the production ■ Pay for skills ■ Organizational design ■ Help a group establish a change plan and implement it ■ Development ■ "It's the weakness of our company in HR work. We need to pay more attention to this issue" [that is, compensating employees]

New Forms of Education of Professionals for Vocational Education and Training

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The paper describes the research being carried out through a European Commission sponsored project 'New Forms of Education of Professionals for Vocational Education and Training. The project brings together partners from fourteen different European countries and is aiming to develop new occupational profiles and a new European Masters (M.A.) programme for education planners, teachers and trainers in VET. The paper describes the aims, methodology and initial results of the project

There has been growing recognition over the last decade of the importance of a skilled workforce as the basis of competitive economic advantage. This has led to increasing attention being paid to initial and continuing vocational education and training. Most European countries have embarked on ambitious programmes of reform designed to ensure a supply of skilled labour for industry and commerce. Whilst the form of these changes may differ from one country to another the underlying objectives are similar including the development of closer links between vocational schools and enterprise, the development of core skills or key qualifications, measures to ensure the 'parity of esteem' of vocational education against general education and moves to promote continuing training and lifelong learning. At the same time changes in work organisation, an ever shortening product life cycle, new standards for quality assurance and an explosion in implementation of new technology has presented a formidable challenge to traditional forms of vocational education and training.

The changing role of vocational education and training has, of course, profound implications for those working in this field. Traditionally vocational education and training has never been seen as a profession in itself, like, for instance doctors or general school teachers. At a research level VET has been the preserve of a variety of different disciplines - including psychology, pedagogy, labour market research, and work science. Planners and policy makers in vocational education and training have likewise been drawn from many different fields. The failure of vocational education and training to gain recognition as a profession is reflected in the relatively low prestige, and rates of pay, for vocational teachers and trainers. It may also be seen in the generally low levels of training for people working in the field when compared with established professions. The new demands being placed on vocational education and training demand a new role for what might be called vocational education and training professionals and new forms of education for these planners and practitioners.

A Community of Practice in Vocational Education and Training

This paper describes the research being carried out under a European Commission sponsored Leonardo Surveys and Analyses project, 'New Forms of Education of Professionals in VET' (EUROPROF). The two year research programme is being carried out by an international team bringing together 16 partners drawn from research institutes and universities in fourteen different European countries. The long term aim of the project is to develop a 'community' of VET researchers and practitioners and the 'professionalisation' of VET, in other words to gain the

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recognition of VET as a discipline and a profession in its own right. In the shorter term the project aims to build an international network of VET researchers and to develop new qualifications for VET professionals, planners, teachers and trainers, through a European Masters (MA) qualification to be offered in universities in different European countries. Needless to say such an undertaking faces serious challenges, not least being the management of such a culturally and linguistically diverse partnership.

Methodologies for International Research

Two important questions concerned the project design and methodology. Traditionally international projects in vocational education and training have tended to work through comparative methodology, through an examination of the different national systems for VET. Such a methodology is inadequate for the aims of EUROPROF. Instead the project has developed the idea of collaborative or co-operative research, through both building transnational teams to focus on common research questions, and through a process of mutual learning based on national research (Heidegger, 1996). The aim is not to transfer features from one national system to another but rather to use the analysis of different national systems as a springboard for the development of new ideas and innovations. Whilst the project will, of course, address its findings to policy makers and planners, the driving force for change is from the bottom up, in changing the practice in the different partner countries and in developing 'model projects' which can serve as an observatory for evaluation and reform. As such the project is based within the tradition of 'action research'.

The second methodological question regards the question of different national cultures and traditions. Within the arena of social policy there are quite different degrees of similarity and difference in different fields of activity. Vocational education and training systems in Europe are unusually diverse, reflecting their emergence in different historical, social, economic and cultural situations (Rose, 1992). Even following the establishment of the European Union and the growth of an international economy, processes of convergence have been accompanied by simultaneous divergent trends (Heidegger & Rauner, 1993). A European qualification implies a degree of conformity in terms of recognition, curriculum, organisation and pedagogy. At the same time it is necessary to respect and capitalise on the different traditions of education in the different countries and on the different regional and national economic needs such education programmes will address. In recognition of the importance of 'training the trainers' the European Commission has sponsored a plethora of different projects and initiatives over the past decade. Yet, despite well meaning intentions and hard and earnest endeavours by researchers and policy makers alike, there has been a marked failure to develop any common approach to the education of VET professionals. The project has developed an approach to this question based on identifying and elaborating a series of common 'cornerstones' for development and in agreeing on a common framework (Attwell, 1996). Within this common framework for the education of VET professionals each national partner is free to develop their own qualifications within their different cultures and systems and according to regional and national needs. The next section of this article will explain the framework for programme development.

Anthropocentric Production and Shaping Skills

The first of the project cornerstones is the idea of anthropocentric production - that workers should be given the skills and the autonomy to shape and control technology and design their own work organisation. Such a concept stands in contrast to the customary 'deficit model' of vocational education and training, to providing the skills and understanding required for people to adapt to socio-economic and technological development. This model has led to a situation where VET is always following behind new technology and new economic developments in a vain attempt to catch up. Instead the project proposes that VET should be providing for 'future skills'. But instead of trying to predict or guess future skill needs, for new production processes and new commercial and social services it is proposed that people themselves should have the ability to 'shape' the content form and organisation of work technology. Obviously this idea is underpinned by social principle and on wider ideas of the organisation of society itself. But it is also predicated within the changes in the organisation of manufacturing and services with increasing rates of change in technology and new emphasis on quality and small batch production. The move away from mass production, the emphasis on small and medium enterprises as the driving force for job creation and the emergence of the 'learning organisation' as a goal for organisational development all ask new competencies of the workforce. The ability of workers to undertake work self-reliantly, independently and to utilise creative and communication skills is a new goal for vocational education and training. Human centred innovation has implications for the organisation of production with the competences of team work, and communication becoming highly valued. The aim of life long learning has been the focus for numerous national and European Community initiatives over the past five years. Life long learning demands new skills and a new approach to learning and work which cannot be gained from traditional VET. VET professionals themselves not only must understand the new skills required, demanding changes in their own skills and knowledge, the new didactic models and methodologies such an approach implies but must themselves accept the need for life long learning.

The 'Social Organisation of Innovation'

The idea of 'shaping' is linked to the aim of the 'social organisation of innovation'. Human skills are increasingly seen as the key element in economic competitiveness resulting in the high priority currently being given to vocational education and training. The European cultural tradition of social partnership and social inclusion emphasises not only economic competitiveness but also social competitiveness - social cohesion and personal self-fulfilment. Technical innovation and new work forms of work organisation, linked to regional development, the creation of new employment opportunities and social reform comprises the social organisation of innovation. In other words innovation and economic growth and development are not based on just on the introduction of new technology and cheaper production costs but on the social process of skilled work. VET professionals, planners, teachers, trainers, have a wider role than the traditional passing on of a set of skills. In viewing human skill as the basis of societal innovation then VET professionals themselves become pivotal in the process of innovation.

Work Process Knowledge

A third cornerstone for the project is the idea of work process knowledge. The role of skilled work in the encouragement of innovation has already been explained. Empirical research has pointed to the importance of work process knowledge - knowledge encompassing the whole work process, often acquired through the experience of work and knowledge which is required for successful performance in the workplace (Fischer, 1996). Whilst theories of the learning organisation and of situated learning have illustrated the centrality of the design of the workplace as a medium and opportunity for learning, less attention has been paid to the role of the teacher and trainer in mediating and facilitating this process. Many of the studies in the field have tended to concentrate on the human resource development and of the implications of new forms of work organisation for management development, rather than examine the role of the teacher and trainer in the acquisition and development of work based knowledge and skills (Attwell and Jennes, 1996). If teachers and trainers are to utilise the workplace as the basis for lifelong learning then they, themselves, need a thorough grounding in occupational and technical skills and work process knowledge.

New Occupational Profiles

The new role and responsibilities for VET professionals are very different to the traditional view of a vocational teacher or trainer. One of the major objectives for the project has been to identify new occupational profiles for VET professionals in the different European countries. Of course many of the teachers and trainers do not currently require or utilise the wide range of competences and skills being proposed. As such a traditional needs analysis would not be sufficient for this purpose, concentrating as it does on the present skills demands. Instead the researchers have conducted interviews with a wide range of different organisations and individuals including policy makers and planners, existing providers of education for teachers and trainers, managers and HRD specialists in enterprises and VET practitioners themselves. The new occupational profiles are multi-dimensional and involve the integration of different expertise and skills.

One key decision has been the different organisational focus for the planners, teachers and trainers. Should there be separate occupational profiles for a teacher working in initial vocational education and training, a trainer working with the long term unemployed and an enterprise based training in continuing education? The EUROPROF project team has attempted to bring together these different roles within a single broad occupational profile. Firstly it is felt that the present divide between initial and continuing VET does not reflect the goal of lifelong learning. Secondly it is seen as desirable that the VET professional of the future is able to employ a wide variety of learning strategies and pedagogic methodologies. Obviously there are different learning strategies for continuing training in a work based situation and for young students in a vocational school. But VET professionals should have an understanding of the theories of learning and to be able to design learning situations based on the needs of the trainees. It is also felt that in the future VET professionals should themselves possess the skills and knowledge to be able to move between different contexts for learning, in the development of their own professional career. An understanding of the broad basis of vocational education and training is also central to the idea of a community of practice, itself an integral part of the goal of developing VET as a profession.

Occupations and Human Resource Development

A further decision, and one which has exited much debate and not inconsiderable disagreements, has regarded the occupational focus of the profiles. Over the past decade Human Resource Development has become well established as a university discipline and within enterprises there has been a move away from seeing training as a personnel function to the appointment of HRD managers. The background for these new HRD professionals is varied although many seem to have an initial degree in business studies. University courses in Human Resource Management are almost always free of any occupational focus, concentrating as they do on the theory, process and management of human resources. In contrast the EUROPROF project design has adopted an occupational focus as the basis for new occupational profiles. The reason lies in the belief in the practice of skilled work as the basis for innovation and on work process knowledge as central to life long learning. One of the conditions for the development of occupational expertise is the ability to reflect on ones own professional and occupational practice. As such VET professionals play two roles, as a skilled practitioner in their own occupational area and as a teacher, trainer or planner in education and trainer. This is not to imply that the two are separate and can be acquired as add on components. A teacher or trainer in health care needs to be able to reflect on their practice as a health care professional from the viewpoint of vocational education and training, similarly they must be able to reflect on their practice as a teacher from the viewpoint of a health care professional. In other words the new occupational profiles include both technical and pedagogic skills. Whilst occupationally focused it would be foolish to narrow the occupational range of practice unnecessarily, especially given the movements towards multi-skilling within the European workforce. In practice the selection of a range of occupations as a basis for the new profiles is not as difficult as it might at first sight appear. Most European countries have a classification system for similar broad occupational roles. In fact the EUROPROF project partners have concentrated on two different groups of occupations - those in areas where technological development and new work organisation is leading to very rapid development and change, such as engineering, and new emerging occupations, like child care and tourism. The decision to develop occupationally based profiles does not mean, however that the importance of human resource development has been ignored. Many of the ideas which have been developed by HRD practitioners, such as the learning organisation and the importance of continuing training, are included in the new profiles.

The Existing Education of VET Professionals

A further stage of the research has involved the examination of existing systems for the education of VET professionals in the different European countries. Existing practice is extremely varied, not only between the European states but also within individual countries. Whilst there are growing moves to establish VET education at university level the lack of recognition as a profession has limited the development of education and training. It has also suffered from the divides between initial vocational education and further or further vocational training, and between the different organisational forms of delivery through full and part time schools, enterprises and more recently special programmes for the unemployed. A number of different traditions and trends can be identified which, in individual countries, may exist in parallel and in some cases overlap.

The first is the education of skilled workers and craftspeople through, usually part time, courses with a curriculum based on the development of teaching skills. Occupational and vocational knowledge and expertise is taken as having been gained through initial vocational training and through a period of work experience and the education is usually 'context free'. This is the predominant form of education for further education teachers in England and Wales. While there are some full time courses the subject focus for these programmes is usually in academic subject areas and for either route vocational pedagogics is not taught as a subject. A recent report into the professional training of trainers in the construction industry in Wales found that „many craft trainers view their responsibilities as educators myopically and, often lack a sufficient breadth of knowledge of the history and development of their own skill and those of the other principal construction skills....Their teacher training is a valuable addition to their professional skills but its structure is too often unrelated to the recipients construction knowledge" (Prosser, 1996). Whilst in the UK academic teachers are required to have completed a university level course, for vocational education and training teachers there are no formal requirements either in terms of education or relevant experience.

Teachers for vocational schools have been educated at university level in Germany since the 1960s, a move which has led to high social status and salary. However, there is a division between vocational teachers and practical trainers, drawn from certified master craftsmen, which is reflected not only in terms of social status and hierarchy, but also in terms of division of knowledge (Heisse, 1996). While practical trainers are experienced experts in their occupational subject, albeit with a limited knowledge in vocational pedagogics, university trained vocational teachers are increasingly separated from occupationally based knowledge or work process knowledge. Entry to university is based on the attainment of the academic Abitur and there is a tendency for the occupational subject studies in universities to be focused on traditional sciences rather than on applied work process knowledge.

In other countries such as Belgium elements of both routes can be seen in the education of vocational education and training professionals. For school based education there are university teaching training programmes incorporated as part of initial degrees, as well as courses in full time teacher training colleges, and part time certificates of pedagogical competence obtainable through social advancement courses (Jennes, 1996). For apprenticeship training there is no formal necessity for industrial or professional experience for the required certificate of competence. In common with many countries professional academic qualifications, especially at university level, are seen as an alternative to vocational education and occupational experience and practice, regardless of the subject in which the degree has been gained.

A New Curriculum Profile for the Education of VET Professionals

The present confusion of qualifications and qualification routes for VET professionals in Europe both reflects the failure of VET to develop as a profession in its own right and at the same time is a barrier to that development. The contrast between university programmes based on academic subject areas and short, usually low level, training courses, based on the development of training and coaching competences for skilled workers, reflects the uncomfortable role of vocational education and training between the realms of education and economy. The recognition of the importance of skilled work as the future basis of innovation in the European economies demands a strategic approach to the education of VET professionals. This analysis has led the EUROPROF project partners to produce a curriculum framework outlining the structure and content of a new Masters (MA) Degree qualification (Attwell, 1997). The first section provides a general background for vocational education and training including the history, structures and systems of VET and the economy and labour market. The second section, entitled vocational pedagogics looks at the theory, practice and research in VET, methods and tools of research in social sciences and didatical theories, methods and approaches in VET. The final two sections of the framework are focused on a defined occupational field. Section three examines the development of occupations and occupational fields, the development of curricula and teaching and learning processes, opportunities for the development of learning situations for the analysis, shaping and evaluation of occupational work and he development of life long learning and professional expertise through participation in the shaping of work. The fourth section of the curriculum framework provides the specialised knowledge base for the subject area underpinning occupational profiles and skilled work in occupations in that area. It includes both theory and practice in the general subject and in specialised areas within that subject.

This new curriculum framework is intended to serve two purposes. Firstly during the first part of 1997 it will be the subject of a major consultation exercise with planners and policy makers, institutional providers, enterprises and social partners. The aim is to gain support for the idea of a new post graduate programme of study in vocational education and training and to gather opinions on the content of such a subject. The second purpose is to act as a practical planning tool for universities in Europe to start the detailed preparation of new programmes for post graduate education in vocational education and training.

Concluding Remarks

There is little doubt that vocational education and training will remain central to policy debates concerning economic and social development, at least within the countries of Europe. However the issues raised are extremely complex, given the interplay between work organisation, social, economic and regional development and education itself. If the future development of the European economies and of employment does indeed rest on social innovation and on the skills of the work force then there is an urgent necessity for the recognition of vocational education and training as a discipline in itself. The development of new occupational profiles and the design of new programmes for the education of VET professionals will not, on their own, 'professionalise the professionals'. Neither will the formation of European research networks or the development of international co-operative research teams by themselves result in the emergence of the 'community of practice' central to the identity and regulation of any discipline. However both developments mark important and necessary steps in this direction.

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Note

The Leonardo Surveys and Analysis Project 'New Forms of Education of Professionals for Vocational education and Training' has produced numerous research papers and publications. If you would like more details of the work of the project please contact Graham Attwell - Tel.: +49 421 218 4626; Fax: +49 421 218 4637; e-mail: attwell@uni.bremen.de.

Theory to Practice to Theory: Results of Applying a Customer-Driven Continuous Improvement Process to an HRD Academic Program

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This paper describes the piloting of a customer-driven process for continuous quality improvement in an HRD academic program. The effort applied a unique process improvement model to three customer groups identified for the HRD academic program: business leaders, HRD scholars, and HRD students. The project identified initial customer requirements and key processes within the academic program, piloted a customer satisfaction instrument, and used customer data to make recommendations for improving the academic program.

Human Resource Development (HRD) is, by its very nature, an applied discipline. However, HRD is also a field that is working hard to develop its own base of theory and research, while at the same time investing heavily in preparing its direct customers (students) for this rapidly growing profession and meeting the needs of its indirect customers (the business and scholarly communities). A challenge facing many of these academic programs is the job of balancing these sometimes divergent goals: developing and testing HRD theory while defining customer requirements and insuring that customer satisfaction is being achieved.

During the last two years, the University of Minnesota's HRD academic program has had the opportunity to implement a process that facilitates a continuous quality improvement effort focused on optimizing the student experience in the program. The impetus for this effort was a common desire heard from (1) students, (2) industry leaders, and (3) HRD scholars for an HRD academic program that more directly connected theory to practice. What goes on in an HRD program in terms of mission, instruction, research, internships, and other extra-curricular activities directly influences the perceptions and satisfaction level of each of the above-mentioned customer groups.

Consequently, the processes and activities of the department need to be continuously improved so that the undergraduate and graduate student experience is enhanced. It is essential that graduates feel that what they have learned is relevant and applicable. Equally important is that the University of Minnesota is seen by HRD professionals and academics as a world-class institution which effectively educates and prepares its student body for further pursuits. It is with these needs in mind that the "Improving the Quality of the Human Resource Development Program" (IQ-HRD) was adopted.

Research Question

How can a graduate HRD academic program conceptualize and implement a customer-driven continuous improvement process? What lessons can be learned in the process?

Quality and the University of Minnesota

In late-1994, the University of Minnesota announced a program entitled "University of Minnesota Quality" (UMQ) after working on formal approaches to quality improvement for some time. The UMQ program was designed to support the strategic vision of the institution (a vision driven by the

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improvement of quality) and to be aligned with the accountability measures of that strategy. The University made available $200,000 in matching fund grants to accelerate the integration of quality-related principles and practices throughout the University community. In addition to the establishment of a UMQ central office, activities during the first-round of the matching fund grant process included working toward the goal of attaining a more "user-friendly" University of Minnesota for students, staff, faculty, and the citizens who seek the services of the University.

The HRD academic program at the University of Minnesota applied for and was awarded a matching-funds grant to implement a continuous quality improvement effort. The purpose of this undertaking was to build on the HRD program's strengths by using a theoretically sound process for insuring that the "theory-to-practice" issue discussed in the introduction of this paper was effectively addressed. The primary goal was to even more effectively align students' education with the requirements of their future employers and leaders in the HRD scholarly community. Secondary benefits included serving an integral role in creating a more "user-friendly" University of Minnesota by recognizing that business and academia are also users of HRD services and play an integral role in quality improvement.

Theoretical Framework

Quality Principles The IQ-HRD effort is a continuous improvement initiative distinct from Total Quality Management (TQM) efforts that many University's are undertaking (Hertzler, 1994; Roberts, 1995; Seymour, 1994; Sims, 1995). It is more limited in scope than TQM, but is grounded in quality principles and techniques that foster continuous improvement in higher education (Brown & Koenig, 1993; Burgess, 1996; Hertzler, 1994; Lozier & Teeter, 1993; Seymour, 1995; Sherr & Lozier, 1991; Williams, 1993).

Some of these undergirding quality principles include: constancy of purpose, focus on input of customers, pursuit of quality through process improvement, continuous survey and fact-based analysis, cyclical nature of the process model (in spirit of plan-do-check-act), emphasis on stakeholder participation in all phases of process, development of interventions based on facts, continuous learning, and, ultimately, performance improvement.

Customers Customers are defined as anyone who ultimately determines the success or failure of a product or service. There has been some resistance to using the term "customers" in the academic setting (Williams, 1993). However, students and others who contribute to the success or failure of an academic program are customers in the truest sense (Burgess, 1996), especially given the changing nature of the academic environment. Quality improvement demands that academic programs look outward and grow to understand that proper measures of success lie in the eyes of their customers.

The IQ-HRD model acknowledges that customers have basic requirements of the HRD program—that is, tangible aspects of a product or service that must be there in order to even have them as customers (Farrell, 1995). Customers also demand that suppliers consider their expectations and perceptions of how the product of service should be delivered (Brocka & Brocka, 1992; Farrell, 1995). Requirements paired with expectations create a "whole picture" of key factors important in maintaining and strengthening customer relationships.

Definition of HRD Program Customers. The success or failure of the University of Minnesota HRD academic program is dependent on quite a few constituencies. For the purposes of this project, three key customer groups were identified. They are:

- Students—who are considered direct customers because they directly receive the services provided by the HRD program and staff.
- Industry leaders in HRD—who are identified as indirect consumers of the products of the department (as they hire graduates of the HRD program).
- Academic leaders in HRD—who also indirectly consume department products (as they hire students further pursuing academia or utilize scholarly research and contributions offered by these students).

Other customer groups identified, but not directly addressed, in this phase of the project include potential students, HRD program faculty, administrative and support staff who work with the HRD students and faculty, and University administrators.

Processes Processes are the means by which an organization carries out its mission and achieves specific outcomes (Lozier & Teeter, 1993; Rummler & Brache, 1995). Organizations are comprised of a multitude of processes and these flows of activity are considered to be the most critical dimension of quality improvement. Seymour (1992) states that "solving problems is not the answer to causing quality, the solution is understanding and continuously improving the processes which give rise to the problems" (p. 75).

Definition of HRD Program Processes. One of the first steps in implementing the process improvement model was to identify key inputs, processes, and outputs of the academic program. Core processes were discussed, listed, reviewed, and revised during several meetings of the HRD faculty involved in the project. The list was checked and expanded by reviewing HRD program-related tasks that HRD faculty were engaged in. If tasks identified were not associated with an existing item on the process list, a new process was sometimes identified and added to the list. As the list lengthened, a distinction was made between core processes and sub-processes, Ultimately, for the University of Minnesota HRD Program, pursuing quality requires improvement in the processes detailed in Table 1.

Table 1. Processes of the HRD Academic Program, University of Minnesota

Processes	Sub-Processes
Recruitment	• Marketing/Recruitment • Admissions
Course Offerings	• Course Content • Course Instruction • Course Scheduling
Student Advising	• Formal student advising • Student mentoring • Comprehensive exams • Theses/Dissertations • Job Placement
Research	• Technical Support for Research • Financial Support for Research • Dissemination of Research
Leadership to HRD Professions	• Professional Association Activity • Partnering • Advocacy for the Profession
Administration	• Faculty Decision-Making • Academic Staffing
Evaluation and improvement of HRD Academic Program	

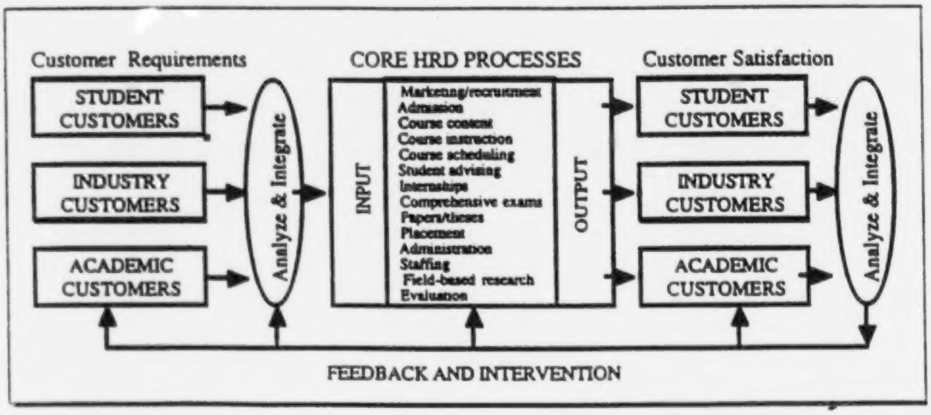
Voice of the Customer The organizing framework for the IQ-HRD effort is called the "Voice of the Customer for the Human Resource Development Program" (Exhibit 1). This model describes an input-output flow in which customer requirements and customer satisfaction are monitored, analyzed, and integrated to serve as the foundation for the systematic quality improvement of specified processes in the HRD academic program.

IQ-HRD Process

The continuous quality improvement effort has proceeded/or will proceed as follows.

1. ***Formation of the HRD Quality Advisory Board*** The Advisory Board was established in Fall, 1996 and consists of twelve members. This Board is unique in that it is comprised of four representative each from the three customer groups of the HRD program

Exhibit 1. The Voice of the Customer for the Human Resource Development Program


Customer Requirements
STUDENT CUSTOMERS
INDUSTRY CUSTOMERS
ACADEMIC CUSTOMERS
Analyze & Integrate
CORE HRD PROCESSES
INPUT
Marketing/recruitment
Admission
Course content
Course instruction
Course scheduling
Student advising
Internships
Comprehensive exams
Papers/theses
Placement
Administration
Staffing
Field-based research
Evaluation
OUTPUT
Customer Satisfaction
STUDENT CUSTOMERS
INDUSTRY CUSTOMERS
ACADEMIC CUSTOMERS
Analyze & Integrate
FEEDBACK AND INTERVENTION

(students, industry leaders, academic leaders). The HRD program's past experience with establishing Quality Advisory Boards has been quite positive and we feel quite confident that these volunteers are able to very effectively represent the key customer group and their needs and expectations.

This Board meets quarterly and serves as a focus group and integrative body that addresses the quality improvement of the student body experience in the HRD program. Their role is to guide the design, development, and implementation of quality improvement processes in the HRD program. Their first steps included:

- Approval of the quality improvement process adopted by the HRD program.
- Verification of key customer groups.
- Determination of customer quality requirements and key quality dimensions of each requirement for each customer group.

2. ***Survey of Customer Base*** The key to any quality improvement effort is decisions based on data obtained directly from a sample of customers. Tasks undertaken in this phase of the IQ-HRD project included:

- Development of a survey to measure customer requirements and customer satisfaction levels of all three customer groups (students, industry leaders, and academic leaders). To simplify the survey process, a single questionnaire format was developed using the HRD academic program processes as an organizer. Customers were asked to indicate their degree of satisfaction or dissatisfaction with twenty-one aspects of the HRD academic program, using a five-point Likert scale. These items provided quantitative data on customer satisfaction. A set of companion items invited customers to recall, if they could, specific satisfying and dissatisfying experiences associated with each aspect of the program. These items provided qualitative data in the form critical incidents.
- Approval of that instrument by Quality Advisory Board members.
- Survey administration. Surveys were piloted by mailing them to approximately 20 representatives of each of the customer groups, with the exception being the student sample which was composed of 12 Masters and 12 Doctoral students. Customer names and addresses for the pilot sample were compiled by consulting faculty members and administrative records. Useable responses were received from 21 students, ten HRD scholars, and six business customers.

3. ***Analysis of Survey Results as a Basis for Action Planning*** Phase three of the IQ-HRD process once again convened the Advisory Board to determine specific process interventions that could better align customer requirements and customer satisfaction. Steps involved in this phase included:

- Analysis of survey results using statistical measures and gap analyses (against customer quality requirements) as well as analysis of qualitative data to determine specific problem areas.
- Identification of discrepancies between different customer bases to determine if and how mutual satisfaction of all groups might be achieved.
- Rating of various process interventions against the criteria of (1) cost, (2) do-ability, (3) effectiveness, (4) time (Hayes, 1992) in order to prioritize a plan of action.
- Recommendation of 21 specific process interventions that were then presented to the HRD Faculty.

4. Implementation of Process Improvement Process Recommendations were shared with the Faculty and they were able to choose specific interventions on which to begin taking action. In all, 10 recommendations were selected to work on beginning in Spring, 1996 (see below for more information). This is the current phase of the IQ-HRD project.

5. Evaluation of Quality Improvement Results Every year another survey will be conducted so that accurate and useful results on the progress of the selected interventions can be monitored. The survey will measure changes in customer satisfaction against pre-determined customer quality requirements.

The Quality Advisory Board will convene quarterly to monitor the progress of steps being taken and provide an element of accountability. They will also be responsible for analyzing and discussing the results of the yearly survey and making recommendations. Finally, they will meet with the HRD faculty so that results and recommendations can be accurately interpreted and the next cycle of the quality improvement process can begin.

Evaluation of IQ-HRD Effort

Indicators of IQ-HRD Success The quality improvement process has been underway at the University of Minnesota's HRD program for just over one year now. The nature of a continuous quality effort requires measurement of real progress on a longer-term horizon. However, results thus far provide promise for a successful initiative. Results in terms of progress of the effort include:

- The identification of key external customers and their quality requirements for the University of Minnesota HRD academic program.
- Establishment of an ongoing Advisory Board for improving the quality of the HRD academic program.
- Development of practical tools and processes to measure key dimensions of customer satisfaction for the HRD academic program.
- Initial measurement of external customers' satisfaction with key dimensions of the program.
- Identification of 21 recommendations to improve the University of Minnesota HRD program.
- Presentation of these results and recommendations to the HRD faculty.
- Ongoing improvement of the HRD academic program processes based upon customer satisfaction data.
- Installation and documentation of an ongoing customer satisfaction measurement process to provide feedback to the Advisory Board, faculty, staff, and students of the HRD academic program.
- Presentation of the IQ-HRD Project through media coverage and conference presentations as well as publishing theory-to-practice research on the strategies, processes, and tools developed through the IQ-HRD Project.

The information resulting from this effort has prompted specific changes in the nature of curriculum and its presentation as well as guidance for student advising, student administration, internship administration, and placement strategy. Additionally, the effort has provided more insight into areas that need to be fortified to ensure that the academic program is maintaining that delicate balance between practice and theory. Finally, the IQ-HRD effort provides the starting point for further applied research into strategies for enhancing the experience of the HRD program's direct customer (the student body) and for more effectively meeting the needs of its indirect customers (industry and academia).

Current Status of IQ-HRD Effort The IQ-HRD effort at the University of Minnesota is still active, experiencing and addressing the difficulties associated with many efforts of this kind. During the Quality Advisory Board meeting in December, it was reported that 6 of the 10 recommendations committed to in Spring, 1996 had been implemented (a 60% achievement rate).

There are still 15 recommendations to implement. The Quality Advisory Board worked with HRD Faculty to identify barriers to future implementation. Quite simply, the University of Minnesota (like most other Universities) is experiencing a lack of resources paired with growing demands on the Faculty and staff. To address this paradox, the Quality Advisory Board encouraged that a new entity be formed to focus on implementation. The "Leadership Council", chaired by a faculty member from the Quality Advisory Board, will be comprised of volunteer faculty, staff, and students. Unlike other committees, membership on the "Leadership Council" will be tied to one specific task. Members will have primary task responsibility and accountability and when their task is complete they will be encouraged to take on another task or discontinue their involvement in the council.

It was decided that the administration of the second annual survey will be delayed to provide additional time for the HRD academic program to continue their work on the current recommendations and then more effectively measure *changes* in customer satisfaction against current customer requirements. The Quality Advisory Board will serve an accountability function for the HRD program and continue to provide guidance to address quality improvement.

Lessons Learned

Discussion by Advisory Board members at the conclusion of the first year of this on-going project, and reflection by the managers of the project, produced the following set of lessons learned.

- Identifying customer quality requirements and developing customer satisfaction measurement tools requires substantial time and resources. An initial effort to immediately identify key quality requirements for each of the three customer groups could not be completed with the resources available. It would have been better to focus initial efforts more narrowly, for instance, on a subset of the requirements of one customer group, and then to continually expand and refine this work.
- An initial effort to measure customer satisfaction and identify quality issues for improvement by using a common questionnaire format across all three customer groups was not optimal. Student responses were encouraging, but business and scholar groups found the questionnaire confusing. We found that separate survey tools are needed for each customer group. It would have been more useful to gather initial customer satisfaction information from business and scholar groups through interviews, and then to develop a questionnaire for follow-up surveys.
- Individuals and organizations in the business and academic community did not initially see themselves as "customers" of the HRD academic program, even though they hired HRD graduates, sponsored HRD research and internships, and used the results of HRD research. This was an additional barrier when soliciting customer feedback from business leaders and HRD scholars.
- It is important to simultaneously measure (1) customer perceptions of satisfaction with the program, and (2) the perceived importance of different aspects of the program. Both sets of data can then be combined to determine which quality improvements will have the greatest impact on customer perceptions.
- We began by focusing on a comprehensive list of academic program processes, but this framework proved unwieldy for seeking customer feedback. It would have been better to focus on measuring and improving a small number of key processes.

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- In analyzing the academic program in terms of inputs, processes, and outputs, we found that connections between many processes and outputs were surprisingly complex. A single decision about the process of delivering the academic program (e.g., staffing of some courses with HRD doctoral students) contributed in complex ways to a range of important outputs, some conflicting (e.g., some HRD doctoral students valued opportunities to teach, but some students perceived these courses as of lower quality since they were not taught by regular faculty). Additionally, we found that one output (e.g., business perception of program quality) might be the result of several processes (e.g., recruitment, course content, course scheduling, internships, and dissemination of research). This made the choice of quality improvement recommendations challenging. This complexity was in contrast to our experience of quality improvement initiatives in private-sector organizations, where a clear linear relationship could be mapped from a work process to a discrete set of outputs (e.g., a given production process results in a discrete set of products or services only associated with that process). This may represent an important difference between the way operations are structured within the field of higher education and in business organizations.
- We learned that implementation requires infrastructure. With limited faculty resources and increasing workloads, our quality improvement process and recommendations needed stronger organizational support than they received during the first year of the initiative. Faculty simply did not have the time to do everything that was required. We have now established a "Leadership Council" of task-focused student and faculty leaders to address the remaining recommendations for quality improvement.
- We now have a deeper understanding of the impact that events in the larger University environment can have on departmental quality initiatives. During the academic year, the University's executive-level quality efforts were redirected as the result of an impending leadership change and changes in strategic initiatives. These changes limited both the financial resources and the emotional energy available to devote to the HRD program's quality improvement efforts.
- Finally, we learned that it is important to anticipate how the role and responsibilities of a Quality Advisory Board will change once their initial set of improvement recommendations are formulated and passed along to program faculty. As our quality improvement program enters its second year, we are re-negotiating the role and responsibilities of the Advisory Board in monitoring implementation, generating additional quality recommendations, and guiding the project into its next phase.

Conclusion

This paper has described the piloting of a customer-driven process for continuous quality improvement in the University of Minnesota's HRD academic program. The effort applied a unique process improvement model to three customer groups: business leaders, HRD scholars, and HRD students. The project identified initial customer requirements and key processes within the academic program, piloted a customer satisfaction instrument, and used customer data to make recommendations for improving the academic program.

Perhaps the strongest contribution of the IQ-HRD methodology is the way in which it addresses a critical area for academic programs. The biggest costs of poor quality in an HRD program are dissatisfied students, dissatisfied business leaders, and dissatisfied academics. The opposite is true in terms of quality. The return-on-investment snowballs as a sound reputation builds in the form of more satisfied students, increased efficiency, lower costs, and increased odds of added funding from responsible partners. An input-process-output flow in which customer requirements and customer satisfaction are monitored, analyzed, and integrated can only result in (1) an HRD academic program that more directly connects theory to practice and (2) a stronger, long-term foundation on which HRD academic programs can be successful.

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Going to the Next Level of Growth: Employing Systems Thinking to Make Effective Interventions

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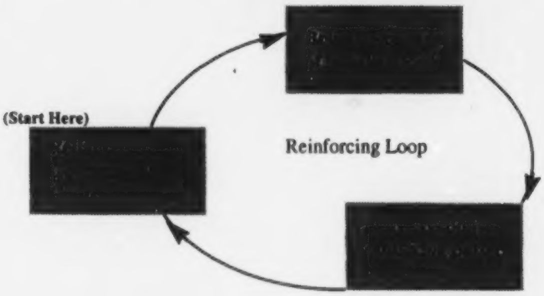
Every organization is faced with issues or problems that need to be addressed. Analyzing those problems has always been one common way of addressing those problems. The changes and challenges that have been encountered by the organization presented in this paper have been looked at through a systems thinking perspective. By looking at any problem from a systems view provides us with the opportunity to find the most effective point for intervention. Addressing problems this way will result in long-term, fundamental change, and that is just one of the results from the research presented here.

What would you do if your company were on the brink of extinction? There is no right or wrong answer to this question. However, when we look at any problem that we are facing in our organizations, one of the first steps we should take is to look at our problem from a systems thinking perspective. Systems thinking allows us to view the whole of the situation. It looks at the "what influences what" dynamics of the issue at hand. One of the key benefits of framing a problem from a systems perspective is that it provides us with the opportunity to find the most effective point for intervention. Our story that we will be illustrating looks at a company, Mycomm Corporation* in Massachusetts, that was predominately reliant on defense-related contracts for most of its history. During the 1980s, there were many changes going on with the cutting back of contracts. Because of those cutbacks, it was now incumbent on many companies, and Mycomm in particular for this business story, to restrategize in order to remain alive. If we were to look at the dynamics of the system at that time during defense-related contract work, it would look like this:

Dynamics of Organizational System Under Defense-Related Contract Work



This systems diagram should be read as follows: The reliance on Government Contract System influences being just a "receiver of information." In the words of the CEO/President, "just doing what you are told." This then influences a passive response and thinking patterns of the workers, which then feeds back to their reliance on government contracts.
*All names have been changed.

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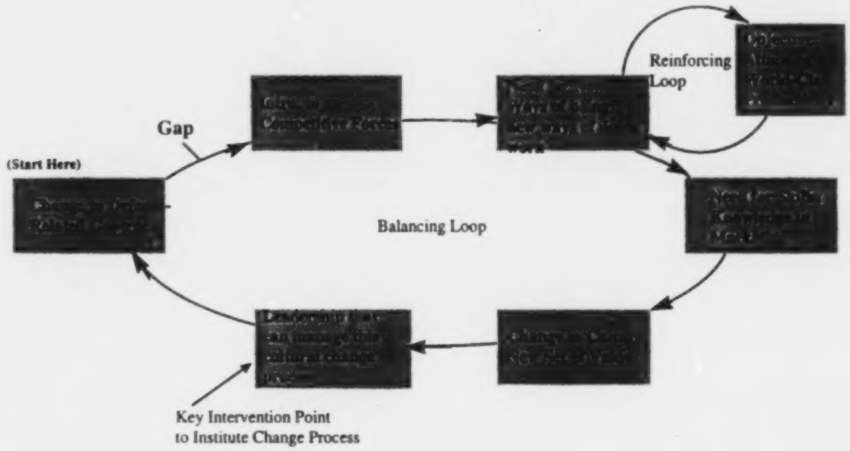
In this paper, we will have the opportunity to explore the decisions that were made and the dramatic results that ensued through the keen guidance and leadership of the CEO of this particular organization. This organization is not only financially thriving but its employees are enjoying the benefits of this transformation through empowered decision making, expanded educational opportunities, and enhanced quality of life issues. This paper captures the journey of this successful organization. It focuses on the dynamic changes in company culture and the philosophy that fosters continuous learning and growth.

The overall theoretical framework of systems thinking will be used to aid decision makers and HRD practitioners in understanding the dynamics inherent in any system in order to make an intervention that promotes positive growth for all in the organization. The point of intervention can be depicted in the following systems diagram. This second illustration shows the transitional phase of Mycomm as they begin to make their withdrawal from relying on defense-related work to being more market-driven.

Transitional Time - Becoming More Market Driven and Competitive



To read this systems diagram, start with the Change in Defense-Related Contracts. There is a gap between the reliance on defense-related work to needing to make the transition to competitive market forces. The introduction to competitive market forces influences a need for new ways of being and new ways of doing work. There is a sub-loop here to indicate that there is a corporate objective of needing to specifically focus on attaining world-class productivity as the way of refocusing work and tasks. To continue with the main loop, the new ways of doing things spawns a need for new skills and knowledge, especially in marketing. The emphasis on new skills and knowledge points to a larger issue of changing the culture and inculcating a new set of values. This change in culture and values points to the need for leadership that can manage this whole process. This loop continues ad infinitum, seeking equilibrium; hence, the "balancing" loop.

Research Question

How do we increase the performance of this organization and our employees to the next level of sharpness and discipline? This was the question that the CEO posed at the end of our first investigation last year, in 1995, and the one we focused on going into our expanded case study commencing in the Summer of 1996.

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Methodology

The undertaking and reporting of this research is going to be viewed as being slightly different from the norm of categorizing something as quantitative or qualitative. In the spirit of the philosophy of organizational learning we will be presenting a story, the story of how a company's life and changes unfold. In this way, we have a synthesis of what happens, of what transpires. Our traditional way of thinking is to analyze and to break things apart. By synthesizing, by seeing the whole of something, we are able to begin to understand the underlying dynamics of a situation in order to make the most effective intervention for the highest leverage in instituting change (Senge, 1990).

The researchers interviewed the President and CEO of Mycomm Corporation in Sturbridge, Massachusetts, and his key top managers in the four business segments comprising Mycomm's core technologies and markets in 1995 and again in 1996 using structured interview questions. Evaluating the documentation of this company, collected from company records and from business literature, provides additional insight and information. The chronicles of this firm will be used to present the findings.

This research explores the underlying dynamics in growing an organization and its people. It provides us a glimpse into how a leader thinks and the impact such beliefs have on an organization, the cultural changes that needed to take place, and the underlying philosophy of the organization that embraces learning at all levels.

The Story of Mycomm: The Real Work Involved

The shift from relying on defense dollars to market-based forces has created an emphasis on the underlying dynamic that can make this fundamental change possible. That dynamic is the skills, abilities, and thinking processes of the workers. As the President and CEO of Mycomm Corporation, Mr. Tom Sweeney, put it, "People didn't know how to think [when immersed in the government contract system]." This part of the evolving story will focus on people—from the vision of the CEO to the front-line worker and what is needed to make that transition. As Mr. Sweeney observed, "They don't relate to it...they don't know what it means at first." But, notice Mr. Sweeney's operative word here—"first." Here is an open door, a window into a new possibility. The beginning point is realizing that "we're looking at re-culturalizing here...changing something to that extent...there is absolutely no substitute for time." Mr. Sweeney postulates that with this kind of change you're looking at something taking five to ten years. Such change is an educational process, a step-by-step evolution that people have to go through that is very, very difficult.

> ***Describing that Change Process*** To share with you the process as experienced and lived by Mr. Tom Sweeney is the best way to present this. As he shared with us: When you set out to change a culture, you have to give people something to focus on. We started with laying out for people a value set, a set of values that would define what our culture would be at the end of the trail, if you will. That set of values is defined as the Mycomm philosophy; it's in every annual report; it's out in the front lobby; it's in every manager's office. You start with 'This is the way I want to behave when I grow up.' That's the culture I want in my company then at the end of the day. Then comes the creation of the business strategy, all the numbers and details, and everything that would have to go around that. Then the constant leadership change education of the organization, leading by example, instilling new ways of approaching things and new thought processes in people. Then you get to the point of formalizing that process, bringing in outside consultants, starting the re-engineering process, and starting personal development programs.

Exceeding That First Objective Laying this foundation has started to pay off handsomely. One very specific objective that was set was to get the world-class level of productivity needed to compete in commercial markets. According to Sweeney, "We can't compete in commercial markets with military productivity; we just can't do it." We can see a snapshot of some of

Mycomm's financial results from defense conversion in their sales per employee in 1995: $195K as a market-driven organization; $40K as a military contractor. Mycomm had to create new technologies from scratch. Their military technologies did not work in commercial markets. But, it is starting to pay off again as measured by another business indicator, the drop in revenue from military sales. Annualized military sales in 1987: $25 million; in 1995: $1.7 million. Sales of $34,043,000 were up 13 percent from the previous fiscal year and earnings per share of $0.17 reversed their year earlier loss of $0.17 per share. Over $30 million of this revenue base is generated from brand new "start-from-scratch" products; the balance being generated from the original military technology.

Mycomm's strategy involves a creative fusion of the firm's core skills and technologies. As stated by Pages (1993, p. 35) Mycomm would try to develop commercial applications for the valuable technologies it possessed, such as its successful move toward creating remote sensors for use in manufacturing. In addition, in areas where Mycomm lacked valuable technologies, it would exploit core skills. Determined to serve new customers with those skills rather than new technologies, Mycomm deliberately moved into the office products and medical markets. All of Mycomm's key profit generators are made from one common material: glass. Everything they make is from glass. As Sweeney explained, "It is used in totally different ways, in totally different markets, using totally different processes for the most part....but we've tried to take what I call a universal skill set..."

With this emphasis on core competency and their core businesses comes the next generation of technology in anticipation of market needs. Another key to Mycomm's thinking and strategy is to look for the best way to solve the customer's problem rather than selling them something they make.

Fuzzy Concepts That Have Worked When you are transforming an organization, a lot is involved and a lot is at stake. Transformation doesn't happen by itself. Change and transformation need that exogenous push. That "push," or foresight should come from the leader. Mr. Sweeney believes that you really have to be an extraordinary leader and manager to survive. There is a complimentary, yet creative, tension between the two concepts of leader and manager. According to Sweeney:

> The way you measure successful managers and leaders is that they're not overwhelmed at this hectic pace; that things really do run well in their organization with or without them; and they're highly visible as leaders and almost invisible as managers…

And just how does one make that transformation? What key business and economic indicators does one reference? Well, picture being back in 1984 and nobody is getting out of the military business. You are Mr. Sweeney and he is telling the Board of Directors of Mycomm that they should get out of the military business. What? But, wait ... it gets more intriguing. Mr. Sweeney proposes that in order to get out of the military business, you have to get into it first in order to get back out. He proposed that they needed to immerse themselves in the military business to make as much as they could, gain a strong financial base, while simultaneously building their commercial business. That strategy definitely paid off. Even though one of the Directors said that they had a forecast from the government saying that the military business is going to do "this," Mr. Sweeney said, "Well, we think it is going to do "this." The board then asked, "What makes you think that this is what's going to happen to the military business?" Mr. Sweeney's reply, "My gut, that's all. I have no numbers; I have no explanation. I'm just telling you it's my gut." As he continued, "I try and coach people - trust yourself, trust your gut."

In Retrospect Mycomm's heavy dependence on defense contracts, in the face of talk of defense spending cut backs, lead to attempts to diversify in the late 1960s and once more in the mid-1970s. Both attempts have to be labeled as failures. It was the mid-1980s when Sweeney, recently on board as president, initiated the third, and final, successful move away from defense contracts and toward competitive markets.

In 1995 as Mr. Sweeney looked back on the conversion process, on changing a culture, on having gone through the process, he shared some key insights as to what was paramount in this process. "Education, education, education, education—as soon as possible in the process is critical." A major portion of that education is just how you look at things, how you solve problems, and what's fundamental about the technology. As Mr. Sweeney continued, "It's this examination and self-assessment, whether you call it a skills inventory [or whatever]; it's being very introspective."

However, as the account of Mycomm unfolds as an odyssey of dynamic organizational change, the use of the term "education" takes on both an interesting and puzzling meaning. A look at the dynamics of the process a year later gives the statement "... education—as soon as possible ..." a different contour. A year later Sweeney seemed to be at the realization that education and training were successful interventions only at the right point in the dynamics of a changing organizational culture.

At that point Mycomm has attained accomplishment and success in their quest for market driven development and growth. According to the President, they had reached their "next level of sharpness and discipline." Now the question became, How does one define that level of sharpness and discipline and nurture it?

The Next Level of Sharpness, Discipline and Growth

Mycomm's odyssey has taken it from the brink of extinction to resilience. When asked what change the new organizational culture had brought about, Karl S. Nysmith, Director of Manufacturing, answered quickly. "We have brought in a future when we didn't have one. That is a real achievement."

When we look at Mycomm with the guidance of its president and the top management team, we see a changed organizational culture and philosophy that was started, as Sweeney points out, at the shop floor and then extended to management. It was an evolution that was often painful and one that many managers couldn't make. At Mycomm and other firms in transition, organizational change was often more easily made in the shop than in the executive suites, but in the end it worked.

The biggest change at Mycomm was seen in the response to production challenges. In the past the issue often was an explanation of why an order could not be completed on time. In the new environment the spirit is, "if we can get the order, they will be able to do the work and do it on time. It will be done to the best quality." From the shop floor to the boardroom everyone knows the financial numbers and the metrics--that information is always available. Everyone knows they have a stake in how well Mycomm does, and that they will be recognized and rewarded for their contribution. That has created the new "can do" perspective of work. Out of the process of change has come a new sharp team-based management structure that works through a well-disciplined, yet dynamic process. The goals of the company's efforts are always stressed, yet a lot of freedom is allowed. There is an insistence on accountability, combined with a liberal recognition and reward system based on people's resourcefulness. The bottom line is of final importance, but at all times a sense of humor is expected.

The practice is rooted in the leadership style of top management. Don V. Goldin, a Vice President and General Manager of Remote Sensor Products, made this clear:

> None of us are micro-managers. An important part of the Mycomm environment is the acceptance of a variance of views and ideas. There is a lot of freedom allowed in getting things done. We make a point of recognizing and rewarding resourcefulness, even when people go off on a different track.

This story illustrates his point. In the past, Mycomm had never been able to successfully produce a 60-degree scope, but two people on their own time went off in their own direction and solved the problem of making one. This was way out of line with their current assignment and more related to the company's history than its future. However, at the new Mycomm, they were not scolded for working outside their bounds; they were praised at a meeting and rewarded for their creativity.

Here we have a case of an old agenda meeting the new level of sharpness and discipline. Having reached the new level meant that the previously unattainable now was in reach. In this new environment, the people on teams are not working to carry out the tasks on the manager's lists, they are doing what is important to them--what they want to see accomplished. At this point it was important to the two workers to use their new level of sharpness to find a solution that was beyond their reach in the past. With the right intervention at the right point, good leadership can foster a synergism between what is important to creative employees and the vision of the organization.

At the next level of organizational dynamics, teams have brought new meaning to quality manufacturing. In the past, the debate was often about what percentage of production would be returned because of defects. Five Percent, ten percent, were seen as standard and accepted. Now defects and returns are just not accepted as normal. Under the teams, the expectation is that there will be no returns for quality reasons. The teams feel they have a stake in it. Today only high quality and on-time delivery are accepted as the norm. This is part of the new environment, which extends from the top, down to the shop floor. Everyone who has stayed with the company has accepted the team spirit. They believe in the mission statement.

Yet sharpness is not always easy. As Tom Sweeney sees it "Pain is inevitable in life; suffering is optional. Suffering is what we create in our minds." Sometimes people are confused about the team environment. It is not all friendly, buddy like. The team can be very competitive, very driven, and intense. People are working together for a goal and their success goes right to the bottom line. They know their reward is going to depend on what the team adds to the bottom line. There was a fear in the beginning that now that you are asking people to take responsibility, they will be punished for their errors. First, you tell them to make the decisions, then you punish them for those decisions.

However, that is not the way it is. Errors are accepted as inevitable in this dynamic environment. There is a high tolerance for risk taking at Mycomm. One general manager came from a company where he said, "It was the safest to do nothing. In a big company like that you can get fired for doing something, but never for doing nothing. Here doing something and taking risks is the norm."

Successes are rewarded. Giving people responsibility is a whole system: they make decisions in a supportive environment, get rewarded accordingly. Team members can ask questions, take lead roles, get the training they need to do what is expected of them.

The fast-paced timing is a very important change and people understand that. With the Mycomm reward system, team members understand the importance of time. If a team can get a new product line that is going to yield $50,000 profit a month on-line two months early, the team members will share in that profit. Everyone has the incentive to see that it happens.

There is a lot of peer pressure to be motivated, to do the best that can be done. Motivation by the teams is very profit orientated. People know their performance and reward is tied to the bottom line. Bottom line improvements are shared but everyone knows "there is no free lunch."

Although there is team pressure, there is another aspect. At Mycomm it is seen as all a kind of fun. The teams are inventive. The leadership wants workers who want to be in the action of the team environment which is motivating to them. Feedback on how your team is doing is seen as very important in this environment and there is a lot of it. Everything and everyone is very open.

Although metric growth is approached with caution at Mycomm, the bottom line is seen as much more important than sales, new levels of growth are important to the teams. There is structure and boundaries and goals, new ideas quickly move forward. The rewarding of good work cannot be overstated as an important element here. Risk taking is accepted and expected. Making errors while trying is accepted. When you do well and contribute to the company's success, you know you will be rewarded. Rewarding is part of leadership.

Leadership as The Effective Point of Intervention

"Leadership is creating a new environment." That is what leadership has meant at Mycomm. Tom Sweeney's leadership style has never been static as he is the catalyst for a new and evolutionary organizational environment. Mr. Sweeney's philosophy is that "the leader can change dramatically the entire way something performs...he or she generally does not do it with a lot of fanfare...you don't find huge change taking place and groups of people running around in a frenzy. There is just this deliberate march towards better that starts to happen." The fundamental key to igniting this change begins with implanting a value system that people can identify with. To quote Mr. Sweeney, "It's the culture that really provides the guidance to get you through what's going to happen and it's the beliefs that get you through that." Mr. Sweeney is very quick to point out, however, that creating the culture is the beginning point. One also needs managers and leaders that are synergistic with that new culture. Having very good leadership at all levels of the organization is also critical.

The top management team gives their president high credit for the cultural change at Mycomm. "Tom Sweeney really did things right in creating a new environment." The struggle, and it was a real struggle at first, was started when the company was on the brink of extinction. so it was taken seriously. Outside expertise was brought in, who knew what they were doing. This made it clear this was not the fad of the week, that the new environment was going to be there for a long while. " Once it was in place, we have stuck with the new Mycomm environment. This has meant that its acceptance has been complete. You can really see a growth in the role of the employees coming from the leadership and the empowered team environment."

However, the convergence of the concepts of leadership and an effective point of intervention necessitates changes in leadership style as a dynamic organization evolves. At the core of the new Mycomm work environment, the team's effort is crucial. Freedom, flexibility, responsibility, a high degree of diversity, an acceptance of and the importance of individual's ideas, all must be there. On the other hand, especially in the start up of a new project, the culture says that there is no room or time for consensus building and that leadership and team empowerment often must involve benevolent dictatorship. As one manager put it:

> You must make the decision as to what goals must be done and the team is empowered to do it. You may not wait to develop a consensus, but you explain why you are doing something. In an empowered environment, the team accepts and understands the goals and their importance. There are different aspects to leadership, depending on the need and the circumstance.

Learning and Education Throughout the Organization

In manufacturing and all other departments of Mycomm the greatest change has be in the competency of the people. With that competency has come the confidence they have in their own competency. Top management puts learning in this perspective:

> We are spending two times as much on education and training as we did in the past. We give them the chance to learn what they have to know to do better and they take advantage of it. We have created an environment that insists on success and progress. That's what we all expect and what the people who come to work for us want. We have developed an environment where people are paying attention to advancing their careers. We give them a great many opportunities to learn, and train, and advance themselves. They take advantage of this.

At Mycomm they are not concerned about people taking the training, developing new skills and then taking them to a new job. If that happens, that is okay. The strategy is to give them the skill and competencies, but also give them an environment where they want to stay. That environment keeps them at Mycomm, even as their ability improves. Education and training are seen as part of a total package. The feeling is that the best people will look at the whole thing and take advantage of it all--that seems to be getting the results the company needs. Employees see themselves as working hard, but they feel comfortable going to work, taking responsibility, and using their competencies. Learning and using that new knowledge has become a matter of being part of the company. It was only within the last year that a high-geared drive for company-wide education was started. Over the years of transition, a learning culture developed until a point was reached where education could be emphasized. In Tom Sweeney's words "You can't teach brain surgery to sixth graders. You have to prepare people to get to the point where they recognize education as important to them." Today, every employee must have at least a GED and each one must complete at least one training program a year. When the new education program was announced, people lined up at the door of Human Resources. Sweeney feels that if those rules were announced five years ago, "A lot of people would have been looking for jobs, because they just knew they were going to be fired."

Results and Conclusions

Managing a dynamic environment will require leadership that understands the changes needed at critical points of development of the organization. Developing this competency in our HRD practitioners as well as other key leaders in organizations is one primary learning that can be harnessed by the results of this research.

The crucial goal of the new learning programs at this organization will be the fostering of the mindset, internal drive, and self-direction needed to complement and promote corporate cultural change.

How this research contributes to new knowledge in HRD

The business story presented here delineates a company "breaking down the walls," of functionality by assiduously building cross-functional teams that are successful, productive, and creative. It also illustrates how the cornerstone discipline of organizational learning, systems thinking, can be utilized and applied in organizations. The research in HRD delineates the need to continue to link HRD to business results. The time is right for HRD professionals to continue the process of improving human performance within organizations by employing a systems thinking perspective. By doing so, an understanding of the whole system in question is looked at from the perspective of elevating the performance of that system to the next level of potential. Where our field of HRD is about tapping into everyone's potential for the benefit of all, this business story is a contribution to that purpose.

The theoretical implications from this research is two-fold. One, employing systems thinking can be applied to any field of research. It elevates our thinking from the events level to seeing the underlying structures inherent in any given situation. It is a process-oriented shift that does require time to develop. Herein lies the challenge for all of us as researchers and practitioners and it also represents the second theoretical implication: in our fast-paced organizations, will we be able to develop a change in our thinking patterns that ultimately will allow us to shift to a more effective, long-term, and systemic perspective?

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Independent Quality Assessment of HRD Projects

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An Independent Quality Assessment method has been developed to evaluate the quality of HRD projects conducted by HRD organizations. The member organizations receive reports with the evaluation results. The results are presented in such a way that organizations can compare their performance with the average performance of the group. Organizations were ranked on the total satisfaction indicator. The ranking position of organizations based on this variable varied considerably over time. A more comprehensive and valid indicator is developed: the aggregated impact indicator. Organizations are ranked according to this new indicator. The relationship between both ranking methods is strong and statistically significant. This means that the varying positions of the organizations in the ranking reflects temporary variations in the quality of the HRD projects.

As has been published extensively before (Mulder, 1996a; 1996b, 1996c; Mulder & Van Ginkel, 1995; Mulder, Van Ginkel & Nijhof, 1994), an Independent Quality Assessment method has been developed by researchers of the Faculty of Educational Science and Technology of the University of Twente in the Netherlands, to evaluate the quality of HRD projects conducted by HRD organizations. Within the framework of this paper it is difficult to give a full description of the method. To summarise it: the method used consists of drawing a random sample of HRD projects conducted by about 40 HRD organizations.

The method is standardized. Customized evaluation is conducted by the HRD organizations and the clients organizations themselves most of the times. A standardized method is used because of budget constraints and comparibility of the data. There are three categories of projects that are evaluated: group based HRD programs (e.g. management, communications and sales training programs), individual HRD programs (e.g. language training, personal coaching), and HRD program design and development (e.g. course design, instructional materials development, documentation production). The HRD organizations are independent companies. Most of them are competitors in the market. They provide HRD services that are being outsourced by companies and institutions. They are members of an association of HRD organizations. Together they conduct joint marketing.

The clients of these projects receive a structured questionnaire in which they assess the quality of the HRD project. The respondents, in most cases, are the contractors of the HRD organizations. Furthermore, they form the liaisons between the HRD organization and the HRD project team in the client organization. In many cases they are also the project managers of the HRD project on behalf of the client organization. They are best informed about the strategic or tactic objectives behind the HRD project, and about the short and long term impact of the project at job performance and organizational level. Responding clients are partly staff officers (such as training managers or personnel managers), partly line managers (such as managers of divisions, business units, and project teams). Until now, this difference did not create problems in answering the questions about the projects.

The HRD organizations, the member organizations of the association, receive reports with the evaluation results. The results are presented in such a way that organizations can compare their performance with the average performance of the group. Part of the IQA method is

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a procedure to handle problems and complaints. When respondents are dissatisfied with the performance of the HRD organizations or when the project implementation created problems, the researchers inform the HRD organization concerned (under the condition that the respondent appreciates this, which is asked in the questionnaire). The researchers check whether complaints and problems are being handled by the HRD organization. If not, the board of the association may be informed. This, however has not happened yet, because of problems and complaints were forwarded to the HRD organizations, the follow-up by these organizations has always been appropriate.

Clients do not receive feedback from the researchers about the performance of the HRD organizations. If they want, they can request a copy of the report from the HRD organization. If they would order all reports from all different HRD organizations, they could compare the ranking. Despite the fact that the clients do not get immediate feedback from the quality assessments, the majority of them cooperates voluntarily in the study. Thsi can be explained by the fact that many of the clients have good relationships with the HRD organizations, and that HRD organizations inform their clients about the IQA method.

Organizations were ranked on the total satisfaction indicator. The ranking position of organizations based on this variable varied considerably over time. A more comprehensive and valid indicator is developed: the aggregated impact indicator. Organizations are ranked according to this new indicator. The relationship between both ranking methods is strong and statistically significant. This means that the varying positions of the organizations in the ranking reflects temporary variations in the quality of the HRD projects.

The method is based on a conceptual framework that can be described in terms of a systems approach in HRD, effectiveness evaluation of HRD projects (Binkerhoff, 1987; Bramley, 1991; Basarab & Root, 1992; Hamblin, 1974; May, Noore & Zammit, 1987; Phillips, 1991), and marketing of HRD services (Gilley & Eggland, 1994, Brinkerhoff & Gill, 1994). Within the systems approach HRD is conceptualized as a field of expertise to solve human competence problems in organizational contexts. It contributes to the effectiveness of human performance in professional practice, and it results in added value for the organization. (Swanson, 1994). As to the systems approach of HRD, three main stages of activities of which HRD projects consist can be distinguished: the before-during-after the intervention stages. The stages are often referred to as the front end analysis and development stage, the implementation stage, and the evaluation stage. Effectiveness evaluation results in information which is needed to give input to the decision making on the implementation of the further HRD projects or other non-HRD projects. As to the effectiveness evaluation of HRD projects four levels of results are distinguished (Kirkpatrick, 1994: reactions of the participants, learning results, changed work behavior, and benefits for the organization.

The IQA method has been used since 1993. Non-response, test-retest, and inter-rater reliability research is concucted, as well a correlational studies and Lisrel analyses have been performed.

Data

The IQA method is developed in 1993. Since 1994, four measurements took place. Each time, one half year during which HRD projects were completed, samples were drawn from the file of completed projects. The half year from which projects were selected was the second half of 1993 (this is abbreviated as 93-2).

In Table 1 the measurement periods, the means of the total satisfaction (on a 10-point scale; 1 = minimum, 10 = maximum) on the HRD projects studied, the total standard deviations of the scores on the total satisfaction indicator (TSI), and the number of HRD projects studied, are indicated. In total 1999 projects were evaluated. And the mean satisfaction across all measurements is 7.7. The differences over time have been tested by an analysis of variances test, which showed no significant differences (F=2.48; P=.06). But even if the test would have shown these differences were statistically significant, the conceptual meaning of the differences would be meaningless. So we remain with our observation that the TSI is a stable indicator which is homogeneous over the years.

Table 1 Means, standard deviations and number of cases (evaluated projects) for the total satisfaction indicator by measurement period.

Measurement period	**Mean**	**Standard Deviation**	**Cases**
93-2	7.57	1.08	347
94-1	7.76	1.17	499
94-2	7.73	1.15	518
95-2	7.77	1.15	635
Total	7.72	1.14	1999

Projects have different objectives. Based on the evaluation methodology, three categories of projects are distinguished: projects aimed at achieving (i) learning results, (ii) changed job performance, and (iii) changed organizational performance. Over time, the results on these objectives differ somewhat more than the differences on total satisfaction (see Table 2). And the results differ for the categories of projects. The more the objectives are education oriented, the higher the effectiveness, the more the objectives are organizational oriented, the lower the effectiveness.

Table 2 Means, standard deviations, F-values and P-values for scores on achieving learning results, changed work behavior, and organizational by measurement period.

Measurement period	**Learning results**		**Work Behavior**		**Organizational Change**	
	Mean	**Sd**	**Mean**	**Sd**	**Mean**	**Sd**
93-2	3.61	.79	3.15	.85	2.85	1.04
94-1	3.79	.79	3.30	.85	3.03	1.09
94-2	3.84	.88	3.41	.94	3.19	1.10
95-2	3.80	.83	3.30	.94	3.11	1.04
Total	3.78	.83	3.30	.91	3.05	1.07
F	4.83		3.81		3.63	
P	0.00		0.01		0.01	

The differences in results between the total satisfation indicator and the results indicators are considerable, and therefore both needed.

Research Questions

Until now HRD organizations were ranked according to their mean score on the TSI. This ranking of HRD organizations over time is very dynamic. One could contend that this is an effect of the range of the observations, and as a consequence of this that the ranking suffers from regression-to-the-means effects. There indeed is a limited range in the scores on the TSI. Over all

1999 cases in the consolidated dataset, there are only 3,7% scores less than 6. On the other hand, non-response research indicated that the differences between respondents and non-respondents as to the TSI values are very small. It should be noted however that this analysis has been done at the association level, and that it needs to be replicated at the HRD organization level to be decisive in this respect. This however can easily be done in the future. For a certain number of HRD organizations it can be checked whether their non-respondents judgements are systematically different. Until now we assume that the dynamics in the ranking on TSI are a reflection of the perceived quality of the HRD projects. To make the ranking more useful, as of 94-2 the longitudinal mean was used for ranking, but the separate data for 93-2 and 94-2 were also given. Each HRD organization received an overview with their name printed before the line with the data of the organization. The other data were anonymous. In this way the organization could see its own position in the whole association, but it could not see the individual position of the other organization.

The use of the IQA method as described here indicates that the variables that indicate aspects of the quality of the HRD programs are treated separately. This result in a fragmented quality picture of the HRD programs together. Further research needs to be oriented towards integration of the variables that indicate the results of the HRD programs. The research question is:

> *How can an aggregated impact indicator (AII) be constructed that is less fragmented and satisfaction oriented than the total satisfaction indicator (TSI)?*

The related question is:

> *Is the variation in ranking of HRD organizations a valid reflection of the variation in the quality of the HRD projects?*

Therefore the relationship between the AII and TSI indicators will be tested by computing the nonparametric correlation coefficient. The expected result is that the relationship is statistically significant.

Constructing the Aggregated Impact Indicator (AII)

The AII will be based upon all variables that are included in the questionnaire that reflect the quality of the HRD program. The various variables will be weighed for their importance within the AII. the weight factors are a normative choice, and it is possible that other researches would attach other importance weights to the variables. The following variables are thought of as indicating aspects of HRD project quality: TSI (question 3), Expectation Realization (question 13). Effects in terms of level of achieved learning results (question 14a), changed work behaviour (14b), and organizational support (14c), agreements made (question 16.1), sticking to agreements (16.2) and performance on components of the HRD project (16.3). In constructing AII we now face two problems:

1. the effect variables (14a-c) need to be corrected; and
2. the scales used in the questions differ as the nature of the questions differ.

First of all we will describe the correction of the effect variables, and then we will turn to the differences between the other variables. The results of the HRD programs need to be corrected for the importance of the training objectives given, the responsibility of the training organization for achieving the results, and the attribution of the results to the effort of the training organization. Data on these variables are available, although many respondents stated that they did not make an agreement as to what part of achieving the intended result on the variable 'training organization responsibility' is considerable. Nevertheless we propose to construct a corrected effect variable according to the formula:

$(1) CE_a = POA_a * IIO_a * RTO_a * ATO_a$

$(2) CE_b = POA_b * IIO_b * RTO_b * ATO_b$

$(3) CE_c = POA_c * IIO_c * RTO_c * ATO_c$

$(4) CE_t = CE_a + CE_b + CE_c$

a,b,c = projects that are aimed at achieving learning results, changed work behaviour and organizational support respectively

CE = Corrected Effect score

POA = Percentage of intended Objective Achieved

IIO =Importance of Intended Objectives

RTO =Responsibility of Training Organization for achieving the intended objectives

ATO=Attribution of achieving the objectives to the Training Organization

The Aggregated Impact Indicator (AII) can be computed according to the following model:

$AII = TSI + ER + CE_t + ACT + SA + SPT$

	Min	Max
TSI = Total Satisfaction Indicator	0	15
ER = Expectation Realization	0	15
CE_t = Corrected total Effect score	0	40
ACT = Agreements made on Components of Training projects	0	10
SA = Sticking to Agreements (keeping promises)	0	10
SPT = Satisfaction on Performance Components of Training programs	0	10

Analysis and Results

First of all overviews were created based on the measurements 93-2, 94-1, 94-2, 95-2. For each measurement the means on the TSI were computed. Next, rank positions of the HRD organizations were determined, based on the means of TSI. Subsequently, the means of the four measurement means were computed, indicated as TSI_{1234}. Then the rank positions of the HRD organizations was determined, based on TSI_{1234}; this rank position is indicated as R-TSI_{1234}.

The following step in the data analysis was the computation of AII, mainly according to the analysis plan. There were some modifications:

- RTO_i (the responsibility of the HRD organizations for achieving the intended objectives) and ATO_i (the attribution of achieving the objectives to the HRD organization) were left out of the computation of the effect size of the HRD project. This means that POA_i (the percentage of objectives that were achieved) was corrected for IIO_i (the importance of the intended objectives), which is only one correction factor. The data do not allow another choice, because many respondents do not indicate the level of responsibility of HRD organizations to achieve the desired results. They either do not have made agreements on this issue, or they simply do not know the level of responsibility of both partner organizations. About the same is the case for the question on the attribution of achieving the objectives to the HRD organization. Many client organizations do not answer this question.

- A complication was that in 93-2 ER (the expectation of the results) was measured differently (as a dichotomous variable). For the other half years the correlation between ER and TSI was computed. The correlations were high, and therefore for 93-2 the values on TSI were substituted in ER.
- A comparable complication was that SPT (satisfaction on performance on components of the HRD program) was not measured in 93-2; it was added as of 94-1; the same solution was chosen as for ER;
- Some member organizations left the association, and some others came in. The organizations that left the association are deleted from the database, and therefore not taken into account in the computations. Of course there were no data of the organizations that became members in 1994 or 1995. The TSI_{1234} and AII_{1234} scores for these organizations are only based on the 1995 or 1994 and 1995 observations.

Next the rank position of HRD organizations based on AII-scores for the projects was determined.

Then the absolute difference between the mean TSI and the mean AII scores per HRD organizations was computed. The difference would be maximal when the best organization in the TSI ranking would be the worst in the AII ranking, the second best on TSI the second worst on AII, etcetera. This situation by the way, would be dramatic for the feedback given to the organizations as of 93-2. It would imply that the AII indicator would completely reverse the ranking of the organizations. In this situation however, the absolute difference would be 760. Divided by 39 HRD organizations, this would result in a maximal mean difference of 19.5 places. The mean difference in the ranking by TSI and AII however is only 5.8 places. The actual difference thus is much smaller than the maximal difference.

The nonparametric correlation test shows a significant correlation coefficient of .738 (p = .000). This underlines the strong relationship between the rankings based on TSI and AII.

Suggestions for Further Research: Testing the Stability of the AII

Now that the AII is constructed, the stability of ranking of HRD organization based on the value of this indicator can be compared with that based on the TSI. As is described before, there are four measurement periods. And the HRD organizations have been ranked based on TSI for there four periods. This can also be done for the AII score. This leads to three different scores for ranking positions, for TSI as well as AII: the difference between 93-2 and 94-1, between 94-1 and 94-2, and between 94-2 and 95-2. The absolute difference scores can be summed, and this is an indicator for ranking instability. The higher the score, the higher the instability. For 45 HRD organizations, the minimum of the score is 0, and the maximum score is 132. The minimum score is applicable when a HRD organization is ranked at exactly the same order over the measurement periods. The maximum score is applicable for instance when a HRD organization is ranked first at the first measurement period, last (45th) during the second (the absolute difference being 44), first during the third, and last again during the fourth period. This result is the maximum difference score of 3 x 44 = 132. The difference between the mean ranking instability scores for TSI and AII can be tested by a one-way analysis of variance. The results of this test can be twofold. First at all, AII can indeed appear to be more stable than TSI. In that case we have to conclude that the TSI ranking instability was a research artefact, probably caused by the limited base of this general quality indicator.

Secondly, it may appear that AII is not more stable than TSI. In that case we have to conclude that TSI has been a good indicator for the integrated quality of HRD projects. In that case the ranking instability will probably have been caused by the variability of the quality of the HRD projects, assuming that it is no consequence of the sampling error discussed before (this can be checked following the procedure described earlier by comparing the quality of HRD projects of non-responding clients with that of responding clients for a certain number of HRD organizations.

This study forms the preparatory step for further and deeper analysis of the reliability of the model that has been constructed to explain the effectiveness of the HRD projects. Now that a more valid constructed quality indicator is available, a new Lisrel analysis may result in a more powerful explanation of the data according to model that has been constructed before (Mulder, 1996b).

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The Relationship Between Managers' Reported Use of Corporately-Developed Training and Performance Indicators for Branch Offices of a Car Rental Firm

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This study which focused on the relationship between branch managers' reported use of training and branch performance compared 15 high and 15 low performing branches. The results showed no significant differences in responses between the two groups on the importance of training. Reported use of hands on training was significantly higher by managers of high performing branches than by managers of low performing branches.

In today's competitive business environment, many organizational decision makers are challenging the fundamental training assumption that learners apply the knowledge and skills acquired during training to their jobs in ways that improve organizational performance. Increasingly, decision makers are demanding training accountability and requiring human resource development (HRD) practitioners to show that training contributes to organizational performance (Phillips, 1994; Swanson & Gradous, 1992).

Literature Review

Many authors have contributed to the body of knowledge about measuring training results. In his classic evaluation model, Kirkpatrick (1957) identified 4 levels of training evaluation: reaction, learning, behavior, and results. Shelton and Alliger (1993) offered guidelines for deciding when to do a results-focused evaluation, and Robinson & Robinson (1991) provided practical advice on how to conduct such an assessment. Swanson & Gradous (1990) contributed the Forecasting Financial Benefits Model complete with fill-in-the-blank forms and examples that show how to calculate the performance values, costs, and benefits expected from HRD efforts. More recently, Phillips (1994) provided a book of case studies that details how practitioners have evaluated training results.

In spite of these and other pragmatic resources, providing decision makers with accurate information about the relationship between training and organizational performance can be challenging for three reasons. First, the organizational managers who are responsible for allocating resources tend to focus on the overall performance of the organization (Lyau & Pucel, 1995). However, measurement and evaluation studies have usually focused on an individual program or a few tightly integrated courses (Phillips,1994). Examples of these studies include Swanson and Sleezer (1989) and Jacobs, Jones, and Neil (1992). Second, training evaluation has often been perfunctory with little analysis (Boverie, Sanchez Mulcahy, and Zondlo, 1994). Third, evaluations have frequently failed to consider the organization's context and culture. To

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address these challenges, systematic evaluation studies are needed that examine the relationship between training and organizational effectiveness (a) within a specific context, (b) for a training program that includes multiple courses and instructional methods and (c) with precise and specified processes used to collect and analyze the data.

Research Methodology

This study was conducted in one organization, a national car rental firm, and focused on the most and least successful branch offices within the firm. The car rental firm was comprised of about 1,000 employees at the corporate headquarters and approximately 190 branch offices. Each branch was responsible for maintaining and renting a fleet of cars. Each served a specific geographical location and was staffed with multiple positions including branch manager, assistant branch manger, sales manager, customer service representative, customer service agent, and service attendant. The employees in branch offices earned financial bonuses based on branch accomplishments relative to specific criteria.

Training, within the context of the car rental firm, was connected to a strategic goal. The firm's decision makers established the goal of marketplace expansion and recognized that accomplishing this goal required developing the firm's human resources. Training was viewed as a tool for achieving the goal and further was a component of the firm's competitive strategy. During the previous year, the firm had invested in improving and updating corporate training for the branch offices.

The updated training program consisted of six modules. Some modules provided practical knowledge and skills for specific positions (e.g., vehicle preparation) and some focused on topics appropriate for multiple positions (e.g., customer service). The training modules included manuals and videos. They also included final examinations for measuring each trainee's knowledge and skills. The corporate human resources department provided each branch office with the training modules and administered the final examinations. Each branch manager was responsible for implementing training. Informal discussion among branch managers at national and regional meetings suggested that they held varied views about the usefulness of the updated training program. Some strongly supported training as a tool for improving current and future performance and some preferred that employees learn the work by doing it on the job.

The research question for the study was: For high and low performing branches, does the branch manager's reported use of training relate to branch performance? Answering the question involved a collaborative effort between the firm's vice president of human resources and a project team. The project team included the instructor and five students who were enrolled in a graduate-level evaluation course at a university proximal to the firm's corporate headquarters.

The research design used to answer the question involved 1) identifying the most and the least successful branch offices, 2) obtaining information about branch managers' reported use of training, and 3) analyzing data about the perceived training use and branch success. The team conducted the investigation in three steps.

The first step was to identify the most and least successful branch offices. An important assessment issue is identifying what to measure or try to measure. As with most complex organizations, the variety of potential performance indicators included hard data (e.g., number of cars rented) and soft data (rate of staff turnover). For this study, the firm's decision makers were responsible for discussing and determining the criteria for identifying the most and least successful branches. The project team used the identified criteria to rank the branches from high to low and to select the 15 highest and the 15 lowest performing branches.

The second step in the process was to obtain information from the branch managers about their perceptions of the training. The project team developed a survey instrument to gather this data via telephone interviews. A pilot test with the firm's training department revealed some needed changes to fit the firm's culture. The final survey contained the following questions: On a scale of 1-5, (a) how important is training for the branch? (b) how much of the training materials do you use for training new hires? (c) how much of the training manuals do you use? (d) how much of the video modules do you use? and (e) what other methods or materials do you use and to what degree on a scale of 1-5 do you use the materials?

The project team also established a protocol for the interviews. The survey was used to guide the semi-structured interviews with branch managers. To avoid bias, three team members who did not know the branch rankings conducted the one-on-one interviews with branch managers. Telephone surveys were used because of the wide decentralization of branch offices. At the beginning of the interview, the project team member explained the purpose of the interview, the role of the project team, and the confidentiality of individual responses. During the interviews, branch managers were asked to rate their answers to the first four questions using a Likert-type scale of 1-5 with 5 being high and 1 low. For the last question, what other methods or materials do you use, managers provided open-ended responses and then rated the level of use on a scale where 5 was high and 1 was low. Managers were also asked to give input on what they felt worked well with the training materials and what improvements they would like to suggest. As much as possible, the managers' responses were recorded verbatim and shortly after the interview the hand-written notes were transcribed by entering them into a computer.

The third step in the process was to analyze the data. For the first four questions, testing the null hypothesis involved setting the confidence level at 90% and using a 2X4 mixed model ANOVA to analyze the data. The design called for the high performing branches and the low performing branches to be tested as factors in a between subjects design. The fifth question, which asked about the use of other training materials and methods, was analyzed by first grouping the open-ended responses into common categories and then examining the emerged categories by levels of use. The managers' other comments were also grouped for analysis. To provide explanatory information, a synthesis of the open-ended responses was compared to the quantitative findings.

Results

After planning the study, the team began gathering data. The first step involved identifying the most and the least successful branches. The firm provided the project team with data concerning 178 branches that had been in continuous operation for the nine-month period that ended September 30, 1995. The decision makers who participated in this effort included the president, the vice president of human resources, the senior vice president of operations, and three regional vice presidents. The firm's vice president of human resources worked with the other decision makers to select performance indicators.

As a group, the decision makers identified the following as measures of branch performance: Utility percentage, out-of-service percentage, bad debt percentage, revenue per vehicle, profit or loss per vehicle, and profit or loss as a percentage of revenue.

Using this information, the study team ranked the branches from 1 to 178 on each indicator. The positive indicators (e.g., utility percentage, revenue per vehicle, profit or loss per vehicle, and profit or loss as a percentage of revenue) were ranked from highest value to lowest value while the negative indicators (out-of-service percentage and bad debt percentage) were ranked from lowest value to highest value. Thus for all performance indicators, a ranking of 1 represented highest performance and a ranking of 178 represented least performance. The team then ranked the branches from 1 to 178 based on the composite total of the six performance indicator rankings. The 15 branches with the highest composite scores and the 15 with the lowest composite scores were the subjects of this study.

The second step in the study involved identifying branch managers' perceptions of training. Using the one-page survey, evaluation team members contacted the branch managers in both groups. Over a two-day period, 30 nationwide branches were surveyed with responses from 28 branch managers. Survey responses were received from 14 managers in each group.

The third step in the study involved examining the relationship between the branch performance and the managers' perceptions of training as captured by the survey. In all tests, the

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high performing group and the low performing group were nested in the two levels of the between subjects factor. Because of the exploratory nature of this study a confidence level of 90% was selected.

The results of the 2 X 4 Mixed Model ANOVA initially appeared to have significant results because the observed F ratio of 8.139 for the training questions (within subjects factor) exceeded the Critical F ratio (0.10, 3, 78) of 2.18 (See Table 1). However, when the F ratios were tested for homogeneity of variance, homogeneity could not be shown to be present. The high value of the observed F ratio does, however, indicate statistically significant differences in the way the different groups answered the first four questions. Comparison of means, variances, and F ratios indicates such a difference might lie in the dissimilarity between attitudes concerning the overall value of training (Question 1) and the value of training materials in use (Questions 3 and 4). Due to difficulties with homogeneity, the responses to the first five survey questions were analyzed using a one-way ANOVA to determine if significant differences existed within the responses to any of the questions.

Table 1. ANOVA

Source	S.S.	df	M.S.	Unadjusted F ratio	Theta Correction
Performance	0.270	1	0.270	0.119	0.119
Subjects/Perf	58.897	26	2.265		
Training	17.971	3	5.990	8.139	8.071
Perf X Train	0.311	3	0.104	0.141	1.397
Train X Subj/Perf	57.406	78	0.736		
Total	134.588	111			

The results of the one-way ANOVAs showed no significant differences between responses of the groups to the first four questions. However, the groups' responses to Question 5, which concerned the use of other training methods, provided additional insight. Two categories emerged from the responses: hands on training and other methods. The category of hands-on training included references to the firm's specific model of structured on-the-job training and other references to hands-on and on-the-job training. Examples of other methods included the use of outside resources and computer tutorials. After reporting the other training methods that were used, the managers rated the use of the other training method on a 1-5 scale. Reported use of hands on training was significantly higher by managers of high performing branches than by managers of low performing branches (see Table 2).

Table 2. One way ANOVA – Question #5 (use of hands-on-training)

Source	S.S	df	M.S.	F Ratio
Performance	3.571	1	3.571	3.523
Subj/Perf	26.357	26	1.014	
Total	29.929	27		

The responses to the question asking for input on what worked well and what could be improved revealed that overall, managers perceived the updated training to be useful and valuable. The suggestions for improvement did not appear to follow a pattern. Examples of these responses included "more time to conduct training" and "a one-week class for all new hires."

The Study's Contribution to Knowledge

This study contributes to new knowledge in HRD because it provides information on the relationship between training and performance. The study revealed no relationship between managers' perceptions of training and branch performance. In this situation, all branch managers highly rated the importance and use of training. However, when managers were asked about other methods that were used for training, two categories of responses emerged: hands-on and other. Reported use of hands on training was significantly higher by managers of high performing branches than by managers of low performing branches.

Sometimes there is nothing so practical as good research (Swanson, 1997). The study showed the benefits of systematically studying a practical situation rather than relying on informal discussions. In this situation, the data provided a different and more useful picture. While the specific results of the study can not be generalized beyond the firm, the study has implications for HRD practitioners who are faced with the multiple views about their training programs. Instead of wondering whether to scrap the updated training program, the vice president of human resources decided to identify specific ways to incorporate more hands-on experiences in branch training. The study also has implications for future research. Because causality cannot be determined from correlation research, additional studies are needed that explore the linkage between hands on training and performance. Also, future researchers should consider measures other than self-reported perceptions of training importance and use. Actual use of training materials may better differentiate high and low performers. Additional research is also needed that explores the perceptions and use of training in different kinds of firms. In today's environment, training is a popular answer regardless of the problem. Moving beyond that answer to systematically study training programs within the context and culture of organizations can be an important step in better linking training and performance.

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Creating Mosaics: The Interrelationships Between Knowledge and Context

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This qualitative study analyzed the interrelationships between knowledge gained in training programs and the context in which professionals practice. Forty semi-structured, interviews were conducted with nurses from hospitals, nursing homes and home care agencies to determine their use of new knowledge. Findings indicate that information from training programs was used to construct a knowledge base. This process was affected by the structural, human resources, political and symbolic frames of the context of practice.

How do professionals develop their practice? What are the relationships between knowledge presented in training programs and the use of that knowledge at the work site? Questioning the effect, value, and impact of training and development programs is not new. The value of training and development programs and the application of the knowledge generated in these programs has been studied, questioned, and analyzed. Evaluation of training has traditionally consisted of studying if participants apply new information upon returning to their work site. These studies report mixed and often contradictory results. Evaluation studies traditionally remove the learner from the context in order to isolate and study how training and education is utilized. However, it is this very isolation that can lead to confusion in evaluation results. Through traditional survey research the component parts of the educational process have been examined, but a holistic look at the process and its interrelationships is missing.

The purpose of this presentation is to describe a research study that emanated from questions raised about the value of training and education programs. The intent of this study was to describe and analyze the interrelationships between knowledge presented in training programs and the context in which professionals work. The context, or work setting, in which professionals practice was believed to have a significant effect on how knowledge is constructed. Training programs cannot be effectively evaluated if they are removed from the context. To understand the impact of educational offerings, the factors in the context that have helped or hindered professionals in their attempts to integrate this knowledge within practice need to be analyzed.

Theoretical Framework

The interrelationships of two major concepts, knowledge and context, were explored in this study. Knowledge, was viewed as the social construction of information that occurred through a process of meaningful learning and perspective transformation. The work of Ausubel (1978, 1986) and Mezirow (1990, 1991) was reviewed and synthesized to describe this view further. These authors were selected because their work frames a constructivist view of knowledge that provides insight into how professionals develop knowledge in clinical practice. Constructivist's believe that individuals learn by linking new information together with past experiences.

According to Ausubel (Ausubel, Novak, & Hanesian, 1978, 1986), the process of meaningful learning occurs as learners relate concepts descriptive of the new knowledge to previous knowledge within their cognitive structure. This integration of new and previous knowledge occurs through changes in the learners' conceptual structure. Concepts are developed into propositions and stored in a hierarchical fashion. This linking of concepts continues and changes as the learner adds more and more information to their knowledge base.

Mezirow (1990) expands this work by adding his definition of learning. "Learning may be defined as the process of making a new or revised interpretation of the meaning of an experience, which guides subsequent understanding, appreciation, and action" (p. 1). In this frame of reference, the learning process involves looking at past experiences, new experiences and reflecting on these for the purpose of making meaning of these events. New knowledge is added as seen through experiences and perceptions. Much of the way the learner acquires knowledge about the world is through childhood experiences.

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These experiences are related to culture and the socialization process experienced. Thus, much initial learning involves acquiring views of the world in an uncritical and non-reflective manner. Learners tend to accept things the way they are because exposure to diverse groups and activities is often limited. Mezirow (1991) believes that to make meaning the learner must make an interpretation. The key component of adult learning in Mezirow's (1991) terms is the ability to reflect on past experiences and assumptions, thus determining if these experiences and assumptions are still valid for the learner's current situation.

For the purpose of this study, context refers to the place where nurses provide care to clients. The context of practice includes the employer, the employing organization, patients, and the community in which the organization resides. The term *context* rather than *organization* was chosen as the focus of this study because there may be many different contexts within one organization. To date, little research has been done on the relationships between the context and the effectiveness of training programs and continuing education.

Cervero (1985) included the identification of the social system (context) as a variable with impact on the outcomes of continuing education programs. "A social system is defined as a collectivity of units which are functionally differentiated and engaged in joint problem solving with respect to a common goal" (Rogers, 1971, p. 28). "This may be the most powerful yet overlooked variable in analyzing the effectiveness of continuing professional education" (Cervero, 1985, p. 87). Warmuth (1987) studied evaluation of continuing education and found that nurses identified the work environment as being three times more likely to be a discourager of using continuing education than an encourager. Kiener and Hentschel (1989) in an exploratory study found that nurses identified lack of administrative support as 15% of the hindrance factor when attempting to apply new knowledge to the work environment.

Bolman and Deal's (1991) four organizational frames were selected as a framework for examining the context of professional practice. The four frames include the structural, human resources, political, and symbolic frame. Bolman and Deal (1991) developed these four frames to provide different lens with which to view organizations.

The structural frame draws on concepts from sociology and emphasizes formal roles, defined relationships, and structures that fit the organizational environment and technology. This frame includes organizational issues such as a division of labor, rules, policies, and procedures (Bolman & Deal, 1991).

The human resource frame originates from organizational social psychologists. Within this view, it is believed that organizations have individuals with needs and feelings that must be taken into account so that individuals can learn, grow and change. (Bolman & Deal, 1991). This frame focuses more on the process of interactions versus the content of work.

The political frame is based on the discipline of political science and views conflict as part of organizational processes. Within this view, the organization is seen as groups competing for power and resources. The tools of this frame are bargaining, negotiation, coercion, and compromise. This frame seems to operate most often in organizations with scarcity of resources and strong political processes (Bolman & Deal, 1991).

The symbolic frame originates from the discipline of anthropology. It abandons rationality and sees organizations as tribes with cultures propelled by rituals, ceremonies, stories, heroes, and myths. Bolman and Deal (1991) believe that organizations with ambiguous goals, uncertain technologies, and varied stakeholder groups tend to develop the symbolic frame more fully as a way to deal with the ambiguity.

Research Questions

This study used an interpretivist framework to search out the relationships and meanings that knowledge and context have for each other. The following research questions were advanced to guide this inquiry: 1. What makes knowledge meaningful in the context of professional practice? 2. How is the creation of knowledge affected by the different frames (structural, political, human relations, symbolic) of the context in which professionals practice? and, 3. What are the interrelationships between knowledge, context and professional practice?

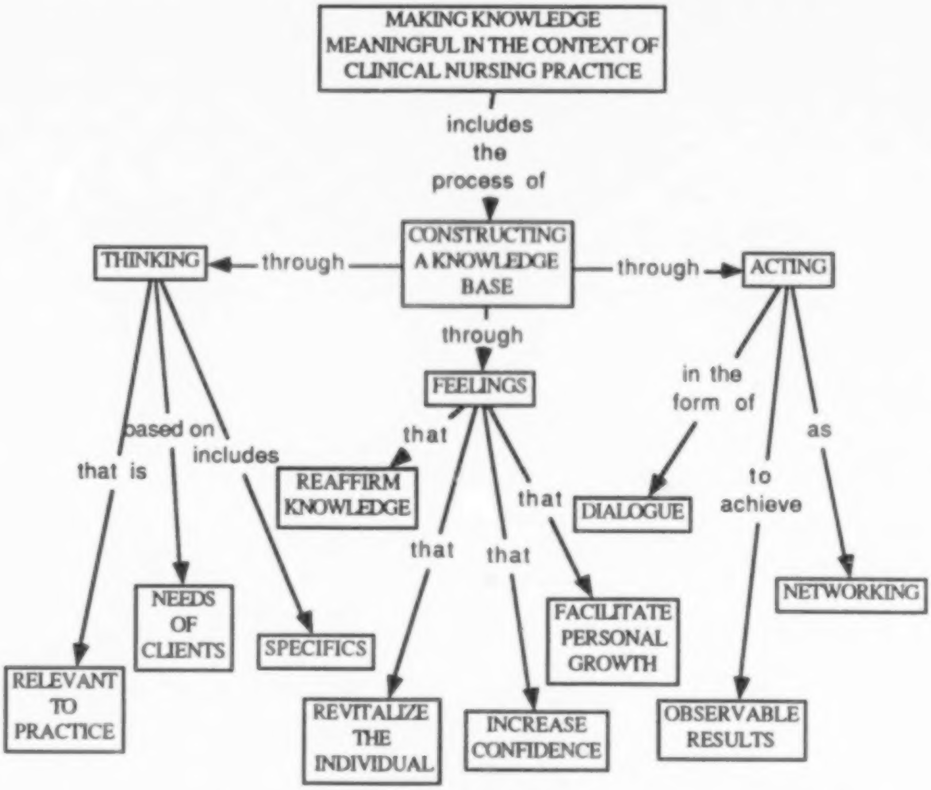
Methodology

Registered professional nurses served as the sample of professionals interviewed in this study. Forty semi-structured, tape-recorded interviews were conducted with nurses from hospitals, nursing homes and home care agencies. The interviews were conducted 9-12 months following participation in a training or continuing education program. Nurses were asked questions about their learning, their work environment, and their clinical practice. Three data analysis strategies were employed in this study. First, following each interview a concept map was created to represent the major themes and concepts discussed in the interview. Second, a computerized category system was created for coding the transcribed interview data. Third, a system of matrices was developed to analyze what all participants in the study said about the specific research questions posed. Dependability and confirmability of study results were assessed using a qualitative data analysis audit (Lincoln & Guba, 1985).

Results

Findings indicated that nurses use unique methods to make knowledge meaningful in the context of practice and that the context of practice has an impact on how this knowledge becomes meaningful.

Making Knowledge Meaningful in the Context of Clinical Nursing Practice
Multiple factors identified in this study indicate how knowledge is made meaningful in the context of practice (See Figure 1).


MAKING KNOWLEDGE MEANINGFUL IN THE CONTEXT OF CLINICAL NURSING PRACTICE
includes the process of
CONSTRUCTING A KNOWLEDGE BASE
through
THINKING
through
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FEELINGS
that is
RELEVANT TO PRACTICE
based on
NEEDS OF CLIENTS
includes
SPECIFICS
that
REAFFIRM KNOWLEDGE
that
REVITALIZE THE INDIVIDUAL
that
INCREASE CONFIDENCE
that
FACILITATE PERSONAL GROWTH
in the form of
DIALOGUE
to achieve
OBSERVABLE RESULTS
as
NETWORKING

Figure 1: Making Knowledge Meaningful in the Context of Practice

A major finding of this research demonstrated that the information presented to nurses in continuing nursing education training (CNE) programs is not transferred directly to clinical practice. Rather, nurses move through a process of thinking about the information, identifying their feelings about the information and acting on the information in a variety of ways. What makes the knowledge meaningful is the fact that nurses go through this complex process rather than simply adopting and applying the information.

Nurses construct their own knowledge base by linking and assimilating new knowledge with their past and previous knowledge and experiences. They link concepts together in ways that have particular meaning to them. For example, when asked how continuing education effects practice one nurse responded as follows, *"Well, I guess I don't think of it like that. I mean I can't really say what helps me deal with what. I think of it more like creating mosaics. I mean, you have all these little pieces that come from all over and in and of themselves they don't mean much, but when you put them together you have a beautiful picture. Continuing education and client care are more like that for me. I take little pieces of what I learn from many places and put them together until I have my own picture."*

The metaphor of a mosaic depicts the idea of assimilation and integration of concepts. Another nurse reports, *"It [continuing education] makes the things that you've seen understandable from lots of different angles that I never recognized. Everybody puts their worlds together just from their experiences, and there's a whole lot of different experiences out there. Continuing education helped me see the different angles. I think I've become a better person and a much better nurse from that."*

Nurses reported that before knowledge presented in CNE programs becomes meaningful they must think about it, determine how the knowledge is relevant to their practice, and analyze how it meets the needs of their clients. Additionally, the knowledge must include enough specifics that they can draw on and link with their current practice.

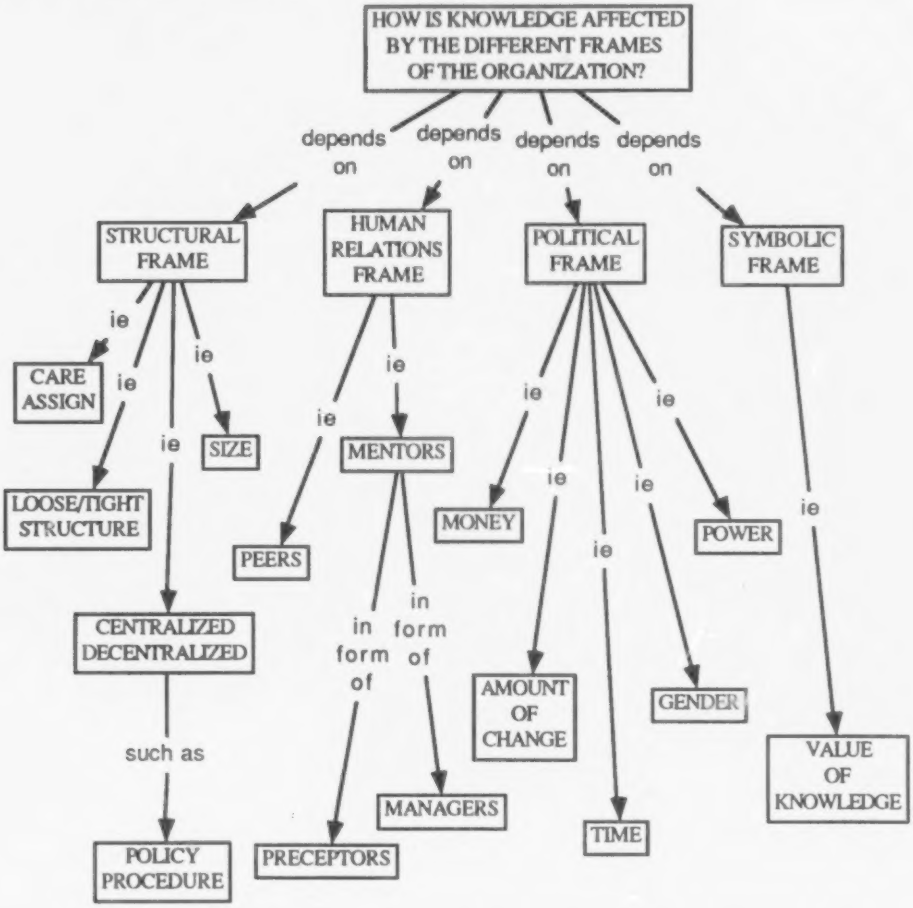
An example of how knowledge is relevant to practice and plays a part in constructing the knowledge base comes from a nurse who described attending a CNE program on fetal monitoring. This nurse stated, *"Well, it was a very practical oriented workshop, because you go right back to the labor and delivery and you're working with fetal monitoring on a daily basis. You're able to interpret the results much more. For example, I had a woman who was having deceleration, and normally decelerations make you nervous, okay, but I had a better understanding of how to delineate between a stressful deceleration and a normal deceleration. And the baby also had some variability and accelerations, which in fetal monitoring indicates that the baby is okay. Some of the other nurses were getting upset, and I said 'Well, now . . ' and I went through what I learned like you can't have accelerations if you have a baby that's in distress. It ended up being true. The baby was fine."*

Another nurse described how CNE information was incorporated into a developing knowledge base. She described how the needs of her client in an emergency situation fostered her recall of information presented in a CNE program. This recall helped her provide care based on what she had learned. She described, *"We had a chest trauma where the person hit the steering wheel, where eventually he did end up with a cardiac tamponade. . . We watched for signs and symptoms of that. It was very obvious with some of the things they talked about [in the CNE program]. . . Like the heart sounds, the hypertension, the tachycardia. Another big one that I noticed was pulse pressure. These are things that are brought out and you say, "Oh, I remember. [The speaker] talked about that."*

Participants also reported that their feelings about the information influence the construction of their knowledge base. Nurses reported that CNE programs reaffirm their knowledge, revitalize their professional development, increase their confidence and facilitate personal growth. The following quote depicts the feelings nurses have in constructing their knowledge base. *"I wouldn't say there was a lot of new information in the program, but the program only reaffirmed what I think about dying. It reaffirms for people that it's important to do the right thing even though no one agrees with me."* Another study participant expanded this view by stating, *"Sometimes you just get such energy from people that are so enthusiastic themselves about what they do, and just so positive about the changes that are going on in nursing (very good things), and I just felt good. I think that was the best thing that I took from it was the enthusiasm that [the speaker] gave."*

Finally, nurses reported that to construct a knowledge base they must take some action on the information. The action is necessary so that the new concepts are linked with previous or existing information. Nurses took this action through discussion and dialogue, by networking at the CNE program and by trying out new things presented and watching the results. Nurses reported that observable client results encouraged the use of new knowledge. For example, the following nurse described how her staff had tried a bladder retraining program learned in a CNE program with a resident in long term care. This nurse reported that the intervention worked. She went on to say, *"I think just* *with the proof that the staff could actually see that there were some effective methods, certainly based on the individual resident, that worked. Now they're more willing and actually at times on new admissions implementing changes without a cue from any of the supervisory staff."*

Impact of Context on the Formation and Use of Knowledge The findings of this study indicated that the context in which nurses practice had a great impact on their use of knowledge from CNE programs (See Figure 2).


HOW IS KNOWLEDGE AFFECTED BY THE DIFFERENT FRAMES OF THE ORGANIZATION?
depends on
depends on
depends on
depends on
STRUCTURAL FRAME
HUMAN RELATIONS FRAME
POLITICAL FRAME
SYMBOLIC FRAME
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CARE ASSIGN
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AMOUNT OF CHANGE
TIME
GENDER
POWER
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VALUE OF KNOWLEDGE

Figure 2: Organizational Impact on Nurses' Use of Knowledge

Overall, nurses reported that the more holistic the care assignment, the more loosely structured the organization, the more decentralized the context and the smaller the context, the greater the use of knowledge. The data were analyzed for the impact of the structural, human relations, political and symbolic frames.

Structural frame. Nurses identified that the structural frame of the organization was seen as a hurdle. It was identified as a hurdle in the sense that nurses were very aware of its existence, they knew the location, it may stand in the way of the identified goal, and yet, they knew precisely how to get around it. Nurses reported that the structural frame often provided a temporary block to their use of knowledge, but they could usually figure out how to manipulate the rules and not let this frame stand in the way of their client's needs. One nurse described how she attended a CNE program and learned a new type of bowel regime that was effective for gerontology clients. She explained how she took this information back to her agency. *"Well, right now we're [trying] a bowel regime. Not officially because we think the agency would come in and say, "Oh, well, we have to get this approved first." But basically* *we are doing PO [oral] meds and Metamucil, in consecutive days. So we're just doing it on three patients to try to change from doing suppositories and enemas all the time. After the CNE program where this was suggested we all got together and figured it out and wrote it down, formalized it and did it. We got the doctors to write the orders, . . . most of the patients are under one physician. . . . .We don't want to go public with it until we do the trial because probably the agency might think, Well, this has to be approved by this and that committee."*

Another nurse described how she attended a CNE program on death and dying. In that program she learned how it is important at the end of a client's life to be able to assist that person in meeting their goals. She discussed how she implemented that learning despite the structural frame of the context in which she practiced. *"Well, [the hospital] is still pretty conservative. I'd like to tell them to lighten up a little bit. This young man who died in February we had a Harley Davidson motorcycle brought to his bedroom on his birthday because he loved motorcycles. We're pretty lucky in that [the unit] is located on a separate section of the hospital. [The unit] is on the ground floor and we have a separate entrance so you can sneak things like that by . . . this was a kid that you couldn't help falling in love with. I mean genuinely, wonderful young man. . . . we decided that he needed to have this Harley, and we actually let him get on it, and the man who loaned it, was taking him through the halls on it. Just because he needed it. We have been known to sneak pets in too. Sometimes you have to push the rules aside to do what the patient wants because this is the end of their life."*

Although the structural frame presented a hurdle for these nurses, it did not stop them from using their new knowledge. The loyalty of these nurse was to the client and meeting the client's needs so they overcame the hurdles of the structural frame.

Human relations frame. Nurses reported that the human relations frame was mostly positive and facilitated their use of knowledge within the context of their practice. Nurses indicated that peers and mentors were encouraging and willing to try out new things that they brought back from CNE programs. Nurses identified that mentors in the form of preceptors and nurse managers had the most influence in how they worked with the new knowledge. The more encouraging, open, and flexible these individuals were the greater the use of knowledge. The following quote was typical of nurses' comments when discussing this organizational frame. *"I think they're [nurse managers] very supportive. Any information that we get from continuing ed., they're more than willing to let you implement or try out. There are no barriers that way."* Nurses specifically described the role that nurse manages played in facilitating the use of new knowledge. As indicated in the following quote, nurses felt that nurse managers were helpful. *"If she's [nurse manager] supportive, then it's going to mean more to you and certainly encourage you to incorporate that knowledge into your practice. If the head nurse doesn't value it, then I think most people will say, well, I'll blow that one off."*

Political frame. The political frame of the organization had a significant impact on how nurses used new information in clinical practice. Money, power, change, gender, and time with clients (as a function of resource allocation) all affected how nurses constructed and integrated their knowledge base in practice. When asked about the politics of their organizations and how the politics affected their use of knowledge, nurses would respond that they tried to stay out of those issues. By staying out of the politics nurses limited their use of new information in practice. The following nurses comments are typical of nurses beliefs in this area. *"I guess the political issues always get in the way. When you feel disempowered you tend not to use it."* Another nurse expressed the frustration with the political frame of the context of her organization. *"Ideally, I'd love to take this information and say we're going to implement this system. It's going to be rough going at first but everyone's going to do it and once we get it up and going it really will be better. My hands are tied because I don't have the power to do it. I know that we need and I know that it can be better than it currently is, but I don't have the power to do it and it's frustrating to me."*

Often the political frame served as a screen or a filter to new knowledge even entering the context of practice. Nurses made judgments about how well the information would "fit" in their practice arena. Rather than deal with conflicts that can be created by some of the knowledge nurses posses, they tend to screen it out of their knowledge base.

Symbolic frame. The symbolic frame of health care organizations seems to arise from the issues identified in the political frame. The issues of gender, power, change, money and time all act as artifacts of the organizational culture. Nurses recognized that the political issues are imbedded in the organization as part of the culture and thus, a general assumption exists that change will be difficult. In a very real sense the political issues define the organizational culture.

As a result nurses tend to avoid political issues and not deal with them in either the political or symbolic frame. Nurses are successful at going around the structural issues because they tackle them directly, but they tend to avoid the political issues. It is then these same political issues that significantly impeded the incorporation of new knowledge in the context of clinical practice.

Another assumption of the symbolic frame, identified in this study, was that specialist knowledge is more valued than general knowledge. Nurses demonstrated this view in a number of ways. Intensive care unit nurses discussed how their knowledge base is more valued than nurses on the floor and, thus, they are afforded opportunities for more independence and accountability. Home care nurses talked of how their knowledge is also valued because they are experts in an area of health care in which few other professionals work. Home care nurses described how being the revenue generators for the agency contributed greatly to their perceived value. Nursing home nurses describe their knowledge based as undervalued and devalued. This devaluation has reached the point where other professionals do not trust the information they provide about clients and look down on the knowledge they have of the elderly. Nurses reported that the value placed on their knowledge affected how willing they were to use new knowledge in practice.

Review of Findings

In reviewing these findings, it is evident that nurses who attended CNE programs used this new information to continually construct and reconstruct their knowledge base. The new information learned in CNE programs was added to a nurse's knowledge base through a complex process of thinking about the new information, acting on or trying out the new information and identifying their feelings about the information.

Finally, this complex process occurred in a particular context and the context shaped the developing knowledge base as well. The structural frame served as a temporary hurdle to the use of new knowledge. The human resources frame facilitated the use of new knowledge through positive interpersonal relationships. The political frame served as a screen to filter out new information. Finally, the assumptions imbedded in the symbolic frame contributed to nurses either feeling valued or devalued.

Implications for the Practice of Human Resource Development

This study has implications for human resource developers, continuing nursing educators, staff development trainers, managers and staff. The issues identified and reported here can be used assist professionals in making meaning of their educational experiences within an employment context.

This study indicated that the role of human resource developers and trainers is demonstrated to be much more than simply designing programs so that professionals can adopt the information in their clinical practice. The role of the human resource developers is facilitating a process of learning, reflection, growth and change. Training programs were demonstrated to serve as a linkage in the process of creating mosaics for professional practice. It is through these growth processes that professionals gain the confidence to act on information in clinical practice. The greatest impact of continuing education and training comes from facilitating the integration of multiple forms of knowledge. However, linking continuing education and personal growth is not always a comfortable position for educators. It is a much more complex view of the learning process and makes the human resource developers accountable for a great deal more than presenting information. The results of this study indicate that professionals must be able to build a knowledge base in practice by using information from a variety of sources. This implies that the educator then becomes a facilitator of the learning process rather than developer of specific program content.

This study also has implications for managers. It is essential for managers, especially managers in health care, to understand and be able to deal with the political frame of the context in which they practice. Managers also need to be able to assist staff in dealing with the political frame and help discourage staff from filtering out new knowledge for practice based on organizational politics. Managers themselves need training in political strategies that foster conflict resolution, negotiation and compromise.

Finally, this study demonstrates the immense learning that clinical practice provides. Human resource developers need to establish learning programs where staff recognize the learning embedded in their clinical practice and begin to "tell their stories". It is through discussion, dialogue and reflection on clinical cases that professionals will continue to construct knowledge bases that inform and transform their professional practice.

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Analysis of Action Learning Experiences Through Use of Critical Incident Reporting

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Action learning is gaining advocates. It is seen as a means of promoting both individual and organizational level learning, while simultaneously addressing recalcitrant problems. However, there has been little research related to the outcomes and value of action learning.. This study documents critical incident based reporting by the learners themselves during and after an international action learning intervention. Qualitative analytical techniques are used to gauge the nature and intensity of the experience, and the sense participants made of it.

There is growing interest in use of action learning as an HRD intervention in corporations as well as governmental organizations. It is also establishing a presence in U.S. universities. Virginia Commonwealth University (VCU), Georgia State University (GSU), and George Washington University (GW) are among those that have explicitly incorporated action learning in their graduate HRD and adult learning curricula. The University of Ballarat in Australia has organized its business school curriculum around action learning. Business School Nederland in Holland bases its MBA programs on principles of action learning. Educational institutions in Asia have also become interested in action learning and incorporated it into certain curricula (e.g., the Management Institute of Singapore).

A number of examples can be found in the United Kingdom. Prominently, the University of Salford in England established the Revans Centre for Action Learning and Research as a part of their Continuing Education Curricula in 1995. The action learning based program of study extends through the doctoral level, and although it is a new program, graduate student enrollments were expected to exceed 100 in the Spring of 1997. To aid its scholars, the Centre has acquired an extensive library that includes records from more than fifty years of the international action learning practice of Professor Reginald Revans, for whom the Centre is named. Accelerating enrollments and an accumulating body of action learning literature are notable evidence that action learning has both an active past and a promising future.

While action learning is now becoming programmatically visible in graduate schools, there is little, if any, systematic research being done to establish what works and why, or what may be the best modalities to apply. In practice, action learning approaches are becoming more widely used in corporations, governments and other organizations around the world, but results pertaining to their use tend to be undocumented. When there is documentation, it can orient on problems solved and dollars saved, without analytical attention to the individual learner, the group dynamics involved, or the learning effects on the organization. How were the participants changed as a result of the experience? What did they feel? What kind of learning process was involved? What impact did the learning experience have on corporate culture and operations?

Use of the term action learning can raise immediate questions. What is it? What distinguishes it from other approaches? Perhaps one of the problems with research related to action learning is in arriving at commonly understood terms of reference. Reg Revans of England, the principle pioneer of action learning, avoids direct definition. Others contend that one can truly comprehend action learning only by experiencing it. It is heavily process based. It flows out of adherence to a loosely constructed framework from which the group dynamics are allowed to unfold, with some degree of monitoring and intervention by a facilitator (referred to by some as a set advisor). Some of the key aspects of process design are: (a) individuals are assigned to an "action learning set," usually consisting of five to six members. No one is designated to lead the set and all members are considered equals; (b) while the set can be composed of members of a natural team, it may be ideal to have a mixed team (hierarchically and cross-organizationally) dealing with issues/problems that are unfamiliar to the participants. This discourages making assumptions about "expertise" and induces fresh thinking and questioning; (c) task

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accomplishment, although urgent, is balanced by the need to reflect critically and learn from the experience. In a sustained sense, learning becomes paramount. Individual learning streams directly into the crucibles of the learning organization, causing new insights to be stored, transformed, and become part of the strategic knowledge base of the enterprise; and (d) the problem(s) to be addressed by the action learning set must be real and unsolved and not without personal risk. A faced reality becomes the motivational engine for learning and problem solving.

Framework of the Study

VCU inaugurated a Summer Overseas Program in 1996 with the support of the Revans Centre at the University of Salford. Titled as an International Action Learning Seminar, it was designed from the start to provide both a valuable learning experience and to create a definitive research base. GSU joined forces with VCU for the purpose of collaborating on research related goals.

The program involved the mixing of cultures and universities. There were 31 student participants, 22 from the United States, five from Australia and four from Canada. British and U.S. faculty members served as mentors to student action learning sets (five). Students came from a variety of institutions and backgrounds. Students from GW, the University of Michigan, the University of Calgary (Canada), and the University of Ballarat (Australia) shared the experience with students from VCU and GSU. It was a very mature group of participants, most with extensive life experience. One of the students was the Senior Vice President for Human Resources at a major global corporation. Two students were Chief Executive Officers. A senior government official was also a group member. Many had experience as consultants to top management in companies.

In keeping with the thrust of action learning, the student action learning sets were assigned real problems of significant difficulty and complexity with which to deal. They did this over a two-week period. Only one of the students had ever been to the University of Salford previously. Of the 11 students from VCU, few knew each other well before the experience. Among the six GSU participants, prior course work taken together had created common bonds for some although they, too, had very limited action learning knowledge.

Most of the participants had never met before. In their sets, they were all on unfamiliar ground dealing with unfamiliar issues and surrounded by unfamiliar colleagues. Further, all of the preparatory work concerning action learning had been through documentation, telephone calls, videotapes, and audiotape. Once the students had concluded a two hour introductory session on site at the University of Salford, they immediately began the experiential learning process. There was no lead-in time for getting acquainted in the social sense.

To build a research base, data collection began before leaving for England. Background information cast in personal narrative form (as opposed to curriculum or employment vitae) had been obtained from each enrollee two months earlier and shared with all student participants around the world. Students provided a one-page personal profile, a statement of their personal expectations for the course, and an indication of prior experience and interest in action learning. Each submission included a photograph of the participant. Learning styles had been assessed well in advance (using the Honey-Mumford Learning Style Questionnaire) and then provided in summary form to each participant.

Breakdown of participants into action learning sets was done by the overall coordinator at VCU using multiple criteria: nationality, gender, learning style, age (it ranged from 23 to 73), background, prior knowledge of the problem area to be addressed, and relative familiarity with action learning. Sets were mixed to provide maximum diversity. For the most part, participants were positioned as far away from their natural expertise as possible. Students knew which set they would be in and the problem they would be addressing for over a month before departure. They reviewed a binder of materials arranged according to learning set and containing the background information on all their colleagues in the summer program. As a result of having such information, a number of students began collaborating via Internet/E-mail before they had ever met formally.

The single client, South Manchester University Hospitals NHS Trust, one of the largest Trusts in England, was undergoing major restructuring. It was dealing with daunting problems of work force morale, strategic planning, and organizational culture (two major hospitals with very different cultures were to be combined). The five problems selected by the client were synergistic in the sense of overall themes and dilemmas, but each was posed because it was a critical and specific responsibility of a hospital manager. One problem involved reconciling the demand for a three percent annual increase in business activity while preparing to downsize the organization by 20 percent in three years' time. Another centered on the need to show clinical areas the benefits of market planning. A third problem was deciding how to reconstruct a strategic planning process that had yielded neither a sense of ownership throughout the organization nor a clear picture of progress made toward reaching goals. The other problems were intertwined with these. The five managers who "owned" the problems were assigned an action learning set to work with them. This required a leap of faith on the part of hospital personnel, because only a handful of the international participants had health service related background. One had engineered a major turnaround in running a large hospital. Two others had nursing backgrounds. One had human resources experience in a health services organization. These individuals were distributed throughout the sets, as were the few participants with previous action learning experience.

Theoretical Considerations and Research Questions

Still without benefit of sustained research over time, the theoretical bases for explaining action learning, when and why it works, and how it differs from other experiential or action-oriented HRD interventions are still forming. However, there are parallels that can be drawn with previous work in small group dynamics and action science (T-groups, Tavistock groups, team-building, leadership studies, etc.), from learning styles research, from cultural communication studies, and from numerous studies in organizational problem-solving. Because this article is focused on one particular event, the two-week experience in the 1996 Summer Overseas Program, it is largely exploratory in nature and is intended to generate a new line of inquiry that can later be linked, as appropriate, to existing research and theory. So little is known from disciplined inquiry about action learning and its effects that the questions guiding this study and influencing the selection of qualitative research strategies are necessarily broad and tentative.

Other questions and new insights are emerging as the research proceeds. Findings are preliminary , i.e., first fruits of what is planned to be a long-term investigation. The following questions should therefore be viewed as subject to alteration, refinement, or even replacement by more discriminating questions that emerge from the data as it is analyzed and reflected upon. Subsequent discoveries of layers of meaning in action learning and implications for HRD practice seem likely. Initially, there were ten major questions we wanted to explore, hoping to find recurring patterns from which tentative inferences could be made. These are:

1. What is the nature of the interpersonal dynamics that surfaced when action learning sets were operating?
2. How have participants perceived the experience?
3. When were people likely to be most fully engaged or least engaged?
4. When were participants puzzled or uncertain about themselves or about what was occurring?
5. What learning gaps did participants discover in themselves?
6. When did they feel most affirmed?
7. What constituted the most important learning moment or event, and why?
8. How did participants assess the quality of the interpersonal associations and interactions with the client?
9. What did the academicians learn from the experience?
10. How does what occurred inform the design of future action learning programs in general and of specific programs of this type?

Methods

The methods used to establish the research context and opportunity have been described above. The methods of analysis are conceptual and qualitative, drawing heavily on textual analysis techniques while at the same time relying on critical incident and learning style reports. No attempt is made to reach statistical generalizability, but rather to identify analytically generalizable findings from masses of data obtained during the course of real events and reflections (Yin, 1994). Those accustomed to working with verbal data will be quick to understand that techniques for data reduction are demanding, requiring constant comparison and constant reworking of the data according to the rules of qualitative inquiry, with the goal of maximum future usability.

In order to provide a research base amenable to such analysis, data collection was embedded in the learning experience from the beginning. All participants kept personal journals *daily*, to include what happened of special significance. Each was asked to reflect upon what was learned from that experience (or critical incident) and how lessons learned would be applied in the future. Students also submitted a 10-page reflective essay after the summer program was over. Much (but by no means all) of the content of essays was tied to a set of simple,

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open-ended questions which primed students to consider what happened that made them feel engaged, puzzled, distanced, in need of additional information, more insightful or even transformed in their thinking, and so on. The connection of these thought-starter questions with the research questions is obvious. Even though students were encouraged to write anything they wanted to, certain categories of experience were predicted from the beginning to be especially meaningful and rich in interpretive value. In addition to the journal entries and the reflective essays about personal experience, the participants also wrote and submitted essays reflecting on the special properties of action learning and the problem solving process. How, they were asked, did action learning facilitate learning? They were specifically to include references to the most salient things learned about action learning as a process (positive and negative).

What the "priming questions" provided for was a common basis for comparison of responses within categories and across learning styles. We wanted to know whether there were patterns across all participants, or whether there were similarities or differences tentatively attributable to learning style, gender, national origin, or other potential variables. Were the reasons given for engagement or disengagement with the process similar or apparently idiosyncratic? Would the critical incidents reported in one learning set be compatible with incidents reported in other sets? The possibilities would clearly have to emerge from the data itself and from the strength of the statements made. In fact, during the analysis a category called "intensity" seemed to be needed to signal the depth of feelings that were expressed. Another pattern began to emerge also, which was subsequently coded as metaphorical, when participants reached for analogies and poetic phrasing to express what had plainly affected them above and beyond the intellectual processing level. How confident participants were that they could initiate and use action learning in the future also became an issue and an analytical category.

For nearly 60 program participant essays (two per student), because of time constraints, coding has been restricted to a macro level and has proceeded without the benefit of computer assisted, text unit sorting and manipulation. For subsequent and more refined analysis, the Sage Publications QSR NUD-IST data analysis software will be used. Essays from classes in action learning at GSU have already been coded, entered, and reported by category and may serve as both pilot and source of comparison for data from the Salford essays. Future sources of data may be textual analysis of participant self-reports in the archival action learning literature, as well as from future classes and organizational interventions. At this juncture, these studies do not pretend to address directly the impact of action learning on organizations as a whole. The research assumption is that if individuals engaged in action learning do not show evidence of having learned, then organizational learning that is presumed to occur through action learning projects is itself questionable. Further, these studies do not presume to address bottom-line impact of action learning problem solving. Since cost-avoidance or expanded profits can often be temporary if there are no fundamental changes in the organizations themselves, action learning as a personal and organizational transformation process may be legitimately considered an a priori target for investigation.

Preliminary Results and Conclusions

The participants bonded closely. There was a desire to maintain contact and this fueled follow-on Internet connections among students. Roughly 25 percent of the participants began organizing for a possible reunion in Charlotte, North Carolina in the Fall of 1996. Over half said that they were planning tentatively to participate in the pre-conference on action learning scheduled prior to the Academy of Human Resource Development Annual Conference in Atlanta, Georgia in March of 1997. Both the valuing of relationship-maintenance and a thirst for further knowledge development appear to have been stimulated by the shared action learning experience.

What are some of the specific early results? First, a common thread of student reactions centers on "freedom to learn." Secondly, there was a sense that much more had been learned in the action learning process than typically happens by way of more standardized, " regular" classroom work. These mature students considered the learning experience intensive, even stressful at times. This is an interesting result since the tempo was largely a product of decisions made by each action learning set and was not at all imposed by mentors or administrators. Several students said they had been favorably transformed by the experience. While participants used a common language (English) and had pleasant memories to relate, they also cited differences between cultures. As might be expected, some of the culture differences were perceived negatively. Learning styles tended to follow true to form. Activists more often than not dominated dialogue. Those requiring a high degree of structure expressed angst at the absence of structure (the action learning sets were in effect self-directed work teams with very limited facilitator/mentor interventions). Pragmatists could be seen assuming leadership roles in moving the agenda forward. Results of re-administering the learning style questionnaire to several of the participants after the program showed some significant shifts in learning style pattern. For example, one student had become markedly more reflective.

Group dynamics were not always placid. Conflicts occurred from time to time and there were a few who found the program an unsettling experience. They were among those who had a desire for more structure and who did not feel comfortable navigating without a pre-set agenda. Despite this, the reflective essays submitted in such cases also revealed that significant learning had occurred. Structure-preferrers tended to rate their learning experience highly even though it caused them to operate out of their normal comfort zone.

During the program there was an unfortunate incidence and pattern of property theft from student dormitory rooms. This created considerable anxiety at mid-point in the program; however, it seems to have even more closely bonded the participants. The importance of being what Revans has called " comrades in adversity" in the midst of a problem solving process was brought home to them in an unexpected and highly personal way. Among other effects, it seemed to elevate their respect for one another. While the thefts were certainly a negative happening for organizers, the host institution, and participants alike, this did not have the power to dampen enthusiasm for the program or its outcomes.

Illustrative Excerpts from Student Essays. Participants wrote about self-discovery , life-changing insights, commitment to process, enhanced self-efficacy, and a hunger to learn. These were recurring themes. Many expressed deep satisfaction with the quality and usefulness of the work done with the clients, despite the tight time frame. As a sampling of comments reproduced here will show, learning progressed on many fronts. This variety underscores the need for deeper analysis and impact studies. For example, when a student says, "This program changed my life forever and I don't want it to go back," something profound seems to have been learned. But there is also a hint of concern that such learning could go away or not be repeatable with similar results in the future. Most essays were produced and submitted several weeks after the program concluded and participants had resumed their work and daily activities. On this basis, the comments can be trusted to describe feelings and thoughts that have been reflected upon, and cannot be dismissed as end-of-the course "emoting." Some who articulated the life-changing theme viewed daily journaling as a way to reconcile inner and outer aspects of themselves. Thinking about the experience as a whole prompted them to make comments like these:

> I was able to see myself in a different light than I'm used to. I was able to break down who I am, to see the ethics, values and beliefs I hold, and to really explore those for the first time. Some of what I saw bothered me deeply; other things I was quite happy about.
>
> I was and probably still am not a sociable person, but through meeting these people I learned that it was all right to be different and to accept others just the way they are.
>
> All in all, for me this course was one of, if not *the* single most intriguing and memorable experience that I have had--in life as well as my graduate program of study. It has broadened my perspectives and interests.
>
> The most special and important moment for me was when I realized that it was O.K. not to be an expert, and that I do not have to have all the answers. For years it bothered me as a personnel specialist that I was expected to go into an organization and solve the problem. How egotistical to think I had all the answers! Now I realize that a better solution is ... to provide methods and tools to allow its members to help themselves.
>
> I need to work on having more faith in my own thoughts and suggestions. I usually feel that my ideas aren't worth presenting...I have been surprised to find that people felt differently about them than I did.
>
> I learned a lot about myself in the two weeks... First and foremost I learned that having a good listening skill is a piece of fine art.

An equally important class of post-event data concerns student reflections on how action learning "came together" for them as the sets worked out interpersonal and task-attending problems simultaneously. One person reported that the most engaging part of the experience was the moment when, after "fits and starts," "palpable" frustrations, volcanic eruptions and "an overriding tension that kept everyone highly tuned to the process," the group finally "began to problem-solve together." Another said that "It was very, very affirming to see how my set so quickly became a close and productive group." Many were surprised that trust levels developed rapidly, and they gave adherence to principles of action learning full credit for this swift transformation from strangers to people who cared about each other and about what they were doing. One reported having difficulty "letting go of closure," a thought perhaps related to a prevailing expectation of pre-determined, specified goals and behavioral measures of progress. But that same participant reveled in the experience of shared perceptions, "phenomenal" creativity, and the thrill it became to develop "an illustration of our insights" for the clients' benefit. "Inspiration" and "electricity" were other descriptors that surfaced in this reflection.

A report from another set suggested that the set made some "strategic errors" that led to a disappointing experience. The commentator did not blame the action learning process per se, but "our inept handling of it." Other comments revealing of how students experienced the process include the following:

> I see action learning as a way to re-humanize our corporations and provide personal development to our businesses..Just as we carry our past experiences in life into our current situations, so we carry our "real lives" into our corporate lives.
>
> I think the [action learning] process needs to start in elementary school.
>
> It was reality; I learned by actually doing. I also learned about myself and learning gaps that I possessed.
>
> The single most important moment for me occurred on the last day of the client presentations. There, our two weeks of work came alive. As each group made its presentation, I saw evidence that the action learning process had worked for different sets, with different personalities, with different problems, and with different client contacts.

Summary of salient observations. The large amounts of striking information generated by even a preliminary review of student documentation is encouraging. Because they are particular salient, the following observations also enable the formation of a set of tentative conclusions:

1. A number of participants came away expressing belief that action learning had changed their perspective about learning. Several immediately became involved in action leaning activities on their return home. They have not chosen to close the book on action learning.
2. There was frequent reference to transformation or deep personal change. Something is different for them now.
3. There were a number of comments about how much had been accomplished in such a short time. They felt like contributors and were proud of it.
4. Most felt a sense of engagement throughout the experience. They apparently did not feel that "tuning out" was a serious or viable option.
5. Students felt most distanced when full meetings of all participants had been scheduled. They tended to view such meetings as an interruption of set-related effort and preferred to be spending their time on the problem assigned, with the people whom they perceived to be most vital for their particular task accomplishment.
6. Students felt regular affirmation, discovering that they were not alone in finding the task to be difficult or--as they sometimes suspected --perhaps a "mission impossible."
7. The mentor role was viewed positively in most instances, especially when intervention by the mentor was minimal. In one instance, the action learning set decided to fully integrate the mentor into the set. For another set, absence of the mentor when needed was an irritant. In another case, a mentor was asked to leave the set area in order that the set could meet and work by itself.

There is only a tantalizing hint in these preliminary findings of what the original, guiding research questions sought to discover. But this state of affairs is common in qualitative research and is perceived to be temporary. In-depth analysis is still to come. Rethinking the questions themselves will be a distinct possibility if they are found not to have the appropriate focal length or power of resolution. Checking with a few participants about how the group data is being coded and interpreted will also help either to confirm or redirect this investigation. But there is little reason to question the assumption that qualitative research can be helpful in the discovery of what actually takes place when people are engaged in action learning.

How This Research Contributes to New Knowledge in HRD

This research addresses one of several gaps in the literature on action learning. Among practitioners, while there are many true believers that action learning sets have unique contributions to make toward personal and organizational effectiveness, there is a sense that the existing research base is insufficient to give them confidence in their beliefs or to help them make the case for using action learning methods with potential clients. A current burgeoning of HRD interest in the action learning approach makes it increasingly incumbent upon theorists and practitioners to step up research activity and define the process and effects of action learning more fully, understandably, and reliably. Whether or not an organization is willing to take the risk of introducing action learning sets may depend in part on whether they can see the benefits that may be accruing in other organizations.

Study of the VCU-initiated Summer Overseas Program is significant because it seems to mark the first time that action learners have been asked to look continuously at the experience through two separate lens, the first individual and the other, organizational (group process). Data gathering methods and analytical strategies being called into service in this study may provide a framework that can be used or adapted by others to broaden the research base and provide new clues for studying not only individual changes, but also effects in organizations where action learning occurs.

A generic qualitative research model with the dimensions and mechanisms suggested here may have considerable value for future researchers. Critical incident research may gather impact and credibility when self-reports are deliberately filtered through dual or multiple lenses, followed by a research process of systematic textual analysis, interpretation, and data revisitation . It may presently be easy to dismiss statements that lives have been changed and new behaviors learned during action learning as either a halo effect or wishful thinking, but the development of a critical mass of data pointing to real and lasting effects would have a different influence. Potentially, such a research model can be used for comparing formal classroom or task force types of processes with the more informal and experientially based action learning processes. Certainly, more can be learned about what does and does not help those who undertake the risks of action learning.

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Professional Learning on the Job: A Qualitative Study for One Profession

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In this study learning on the job of teachers is addressed. The purpose of the study is to reveal perceptions of professionals themselves in order to gain insight into how professionals are learning on the job. It was assumed that learning originates from the interplay between individual and environmental variables. Therefore, antecedents of professional learning were also determined as well as organizational conditions perceived as influencing learning on the job.

Professionals generally need to keep up their skills after they have graduated in order to develop their competence and to improve the quality of the service provided to clients (Houle, 1980; Mintzberg, 1979). Continous learning of professionals can take place in a variety of ways although different authors describe these ways differently. Houle (1980), for instance, describes three different modes of learning: discovery, inquiry, and performance, whereas Marsick & Watkins (1990) and Watkins & Marsick (1992) stress that learning can take place formally, informally, and incidentally. Emphasizing the variety of ways in which professionals can learn means that non-traditional ways of learning come into the picture. Traditionally, professionals are expected to improve and update their skills in very specific ways: by reading journals and literature, participating in courses and attending conferences (Mintzberg, 1979; Noe & Wilk, 1993). These ways are very well suited to keep up with new developments and they reflect a specific view on professional development. In this view, new scientific developments arising outside the professional practice are the main source for improvement of professional practice. Therefore, it is assumed that professional development is largely based on learning by transmission of knowledge.

Recently, this model of professional development has been discussed, especially for teachers (Lieberman, 1995; Little, 1993). Transmission of knowledge is denied as most important for professional learning, as professional development refers to changes in knowledge, skills, attitudes, and behavior (Hoyle & John, 1995). Professionals need to change their behavior in order to implement new developments and to improve their practice (Osterman & Kottkamp, 1993). Changing behavior is conceived of as a very difficult and demanding learning process, that can take place only in practice. Moreover, professionals themselves are considered to be important in creating their own knowledge, which is called practical knowledge. In this new model of professional development, other ways of learning are stressed. Great emphasis is given to learning on the job and to a variety of activities which are hypothesized to stimulate reflection and interaction. However, little is known about the extent to which teachers are actually learning on the job and the ways in which they do this.

Theoretical Framework

Learning on the job is conceived of as depending on individual and environmental factors. On the one hand, the environment has to offer opportunities for learning, on the other hand, individuals have to make use of these opportunities.

The model of the learning potential of jobs is based on this interaction between individual and environmental factors. This model aims at different variables and dimensions that are conducive to learning (Frei, Duell & Baitsch, 1984; Onstenk, 1992, 1995). In this model learning and the development of competence is hypothesized to result from specific combinations of skills and qualifications of the worker, learning opportunities on site, and the ability and willingness of

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workers to learn and develop their competence. Learning opportunities at the job depend on job characteristics and features of the work environment.

The following characteristics are considered to be important: completeness, complexity, innovations, occurrence of events and problems, planning, discretion space, interaction with colleagues and supervisors, availability of feedback, information, computers, and material clues. Next to these learning opportunities the following features of the organi-zational policy and structure are considered to affect the learning potential of jobs: innovation policy, organizational structure, career and personnel policy, information structure, participation structure, and learning climate.

Although this model reveals relevant factors for learning, the model itself lacks empirical validation. Also, the different individual factors are very broadly defined. Theories concerning motivation of adults to learn, self-directed learning and professional development stress that the meaning attached to a specific learning situation of activity is crucial for learning to occur (Candy, 1991; Farr & Middlebrooks, 1990; Merriam & Caffarella, 1991). Stressing the learners' own frame of reference means taking into account interest, attitudes, beliefs, intentions, goals, needs and valences (Candy, 1989, 1991; Farr & Middlebrooks, 1990; Heckhausen & Kuhl, 1985; Wlodkowksy, 1985).

So, the most salient factors for professional learning remain unclear. As a first step in discovering these factors, this research was carried out to reveal factors that are relevant for learning in the perception of professionals themselves.

Research Questions

Three research questions were addressed:

1. In what ways do professionals perceive that they learn on the job?
2. Which personal factors influence their learning?
3. Which environmental conditions are perceived to be influencing learning?

Methodology

Participants. Sixteen secondary school teachers participated in this study. They had not been randomly selected from a larger group. Selection of respondents was made in consultation with the University Teacher Training Institute. Eight teachers were selected on the basis of their personal contact with the Training Institute while the other teachers had been contacted through informal ways. Teachers were selected from the categories of languages, natural sciences, and social sciences. From each category one discipline was arbitrarily chosen, which resulted in Dutch, mathematics, and history. The sample excluded teachers in their first five years of employment. In that period, they are mastering their profession which is assumed to influence their main concerns as well as their learning (Huberman, 1989). Although there are no theories that relate gender to learning on the job, in order to get variation in opinions at least one female teacher in each discipline was included. So, the sample consisted of seven teachers in history, five in mathematics, and four in Dutch language. Their years of experience in teaching ranged from 6 to 33 years, with only two teachers with less than 15 years of experience. With regard to gender, there were 5 women and 11 men involved. Most of the teachers were teaching in upper secondary classes.

Instruments. In-depth, open-ended interviews were conducted. To help teachers to start talking about their own learning, in each interview the following key questions were posed:

* Are there any recent events that have influenced your professional performance?
* How do you keep up with new developments?
* Do you encounter challenging situations in your job?
* Are you still learning from the job?
* Did your performance change during your career?
* Do you receive support for your professional development?
* What kind of support do you wish for your professional development?

Interviews were conducted in the Spring of 1995 and each one took one hour on the average. Each interview was tape-recorded and transcribed.

Analysis. A computer program for qualitative data analysis (Kwalitan 4.0) was used. This program is based on the premises of grounded theory, as developed by Glaser & Strauss in 1977 (Wietzman & Miles, 1995). The aim of grounded theory is to develop theory by starting from the empirical data. The data themselves serve as main source for exploring different themes and variables concerning the problem under investigation.

Analysis took place at different stages. Initially, the interview protocols were divided into segments, in such a way that each segment was related to a different theme. Next, codes were attached to these segments. Codes were created by reading the text of segments and by expressing the content of this segment in one or more words. Thus, codes were labels that reflected the theme that was present in a specific segment. If new data did not give rise to new codes, this stage was finished. In the second stage new data were coded. Next, selection of the most significant codes took place. Significant codes were codes that served as a possible answer to one of the research questions. Comparisons were made between identical codes and relationships between codes were looked for in order to distinguish common aspects that reflected an underlying variable. The aim was to search for dimensions underlying the data and for codes which could serve as an indicator for one of the variables. Finally, when codes were ordered by variables the level of analysis changed. Instead of comparing codes, comparisons were conducted between respondents. For each variable, a written summary was made per respondent which reflected the position of this respondent on that variable. On the basis of these summaries of each variable, the analysis was aimed at discerning similarities and dissimilarities between groups of respondents, per variable. Hence, these similarities and dissimilarities were used to formulate different categories of each variable.

Results

First Research Question. With regard to the first research question, the analysis revealed that learning on the job was related to very different kinds of activities. The following individually undertaken activities, all related to teaching in the classroom, were perceived to be leading to learning:

- reading books, professional journals, or newspapers;
- reading teaching manuals and methods ;
- preparing or creating instructional materials;
- constructing tests;
- experimenting with new teaching materials;
- working with new teaching methods;
- teaching different classes and grades;
- coping with different needs of pupils;
- motivating pupils;
- guiding pupils;
- asking for feedback;
- reflecting on one's performance;
- changing one's own teaching behavior.

Next to these activities a lot of activities were mentioned which are executed in the broader school context and in close contact with colleagues:

- exchanging teaching materials;
- exchanging ideas and experience;
- asking for help and providing help;
- attending colleagues' lessons;
- being supervised or coached;
- giving supervision;
- having meetings;
- joining committees;

- taking policy decisions;
- organizing extracurricular activities for pupils;
- developing or providing training for colleagues;
- talking with colleagues outside the school;
- visiting other schools.

All these activities could be classified into the following categories:

1. gathering information;
2. working with (new) method and materials;
3. improving one's performance;
4. teaching in itself;
5. exchanging teaching materials, ideas and experiences;
6. executing tasks at the school level related to school policy or to guidance of pupils.

Second Research Question. Concerning the second question about personal factors influencing learning, each learning activity reported was analyzed in order to reveal the incentive to learn. Incentives which related to personal factors were: interest, initiative, development during the career, need for variation, experiencing problems and lack of challenge. Further analysis revealed three variables which influenced the kinds of activities which will be undertaken. These variables were:

1. *Professionality*. This variable concerns different kinds of beliefs regarding practice. These beliefs are related to two aspects of professionality. First, beliefs have to do with opinions concerning the most important goal of teaching. Teachers tended to vary in this respect. Three teachers believed that teaching pupils how to learn and paying attention to pupils' learning processes is most important. Six teachers adhered to the belief that knowledge of subject matter is most important whereas seven teachers largely emphasized the social development of pupils.

Secondly, beliefs concern the range of tasks that belong to the job. Two teachers were exclusively oriented towards their daily activities in the classroom and they showed a restricted task orientation. Five teachers showed a bounded orientation: they were involved in many school-directed tasks but only with the intention to improve their classroom activities. All other teachers adhered to an extended orientation: they believed that next to teaching, school policy and involvement in collaboration are crucial parts of the job.

Beliefs concerning professionality seemed to be important for the kinds of activities teachers executed as well as for the importance attached to specific activities. For instance, all teachers reported that they gathered some information concerning new developments, but teachers with subject-oriented beliefs tended to do this more intensely. Also, teachers with restricted task orientations did not execute school tasks whereas only teachers with extended orientations executed tasks related to school policy.

2. *Pro-activity*. This variable concerns the extent to which activities are actively looked for. Although all activities required individual action, persons showed to be more or less purposeful in executing these activities. If a person purposefully executed one of the activities, the activity was voluntarily undertaken and out of one's own initiative. However, a person can never be pro-active in all activities, and therefore pro-activity is always related to specific kinds of activities, expressing one's preferences.

All teachers differed largely in their initiative for executing activities. The initiative was mainly directed towards working or experimenting with method and materials, teaching and towards executing school tasks. Only a few teachers took the initiative to keep up with new developments through gathering information, to exchange in interaction with colleagues, or to improve their performance. However, this did not imply that these activities were not undertaken, but only that in these activities the environment played a crucial role.

3. *Amount of challenge*. This variable refers to the extent to which teaching and other tasks at the school level are experienced as challenging. For learning a certain amount of challenge seemed necessary. Teachers regarded variation as the main source of challenge. Some teachers considered teaching itself as challenging because teaching implied non-routine situations which they valued positively. Nevertheless, other teachers expressed that variation derived from other sources. A change in teaching method or materials could cause a regular turn

of events but variation was also due to executing other tasks, teaching another grade, having new pupils, or having a new colleague.

Nine teachers experienced teaching as challenging. Five of these teachers also expressed to find some challenge in executing school tasks. Hence, there were also seven teachers who did not experience teaching as a challenging activity. However, five of these seven teachers seemed to find some amount of challenge in executing school tasks. There were two teachers who experienced no challenge at all. So, teachers showed different patterns concerning this variable. This pattern strongly influenced the perception of learning activities. Teachers who regarded teaching as challenging reported more often that they were learning from teaching activities in itself and from working with method and materials. On the contrary, teachers who experienced school tasks as challenging were more inclined to report these as learning activities.

Third Research Question. This question about environmental conditions perceived to influence learning was answered first by analyzing the (environmental) incentive to each learning activity. Secondly, respondents were asked for their opinions and experiences regarding stimulating and restricting conditions. These were all ordered and classified under a smaller number of variables. This procedure resulted in the following variables:

1. *Collaborative culture*. This variable refers to a culture in which teachers jointly plan and coordinate subject matter, as well as the extent to which they share experiences, have discussions with one another, and provide help and support. Teachers expressed a great need for this sharing of ideas and experiences, therefore, for specific kinds of interaction. Thirteen teachers reported this as an important condition for learning, but nine of them felt that this condition was insufficiently available in their organization. Although all teachers have to collaborate in some way and have to attend meetings, they complained about the lack of interaction and discussion about what happened in the classroom and about ideas and beliefs concerning education and teaching. Thus, teachers missed support and enthusiasm from colleagues and felt hampered in implementing new developments and in improving their practice.

Even if collaboration was mandated by scheduling meetings, these kinds of problems remained or even got worse. Collaboration which was compulsory was often experienced as ineffective and time consuming and even created conflicts that continued. For collaboration to be fruitful to learning, it seemed especially important that teachers shared beliefs, interests, and values about teaching as well as about collaboration.

2. *Support from management*. Teachers reported that they would like to be treated as individuals with their own interests and abilities. They considered individualized reward and encouragement as stimulating to their learning. However, the exchange between teachers and management was severely impeded by lack of communication. So, teachers felt denied because they could not discuss their daily problems and this was considered to be restricting to their learning.

3. *New developments*. Developments within the discipline, but also developments in curriculum or method, appeared to have strong effects on learning because of their consequences for teaching. A lot of new developments were mandated by the government and had to be put into practice. But these new developments also stimulated discussion and interaction with colleagues.

4. *Innovation policy*. In some schools the policy concerning new developments aimed at involvement of teachers themselves. Teachers were working together in committees to prepare and discuss innovations. This was experienced as very stimulating as teachers felt more committed to new developments and supported in changing their practice.

5. *Task differentiation*. The majority of teachers considered executing other tasks at the school level as very stimulating because these tasks gave rise to new experiences which were conducive to learning. School tasks could be pupil or policy-oriented and they were both valued differently. Pupil-oriented tasks were especially valued because of the possibilities for more contact with pupils, whereas policy-oriented tasks were valued because of the greater organizational commitment. Because of these positive experiences with school tasks, teachers were convinced that every teacher should execute such tasks. A policy concerning the division of tasks among the employees of the school was conceived of as stimulating, but only if teachers were not forced to execute tasks for which they were not motivated.

Conclusions

This study suggests that there are different ways in which teachers learn on the job. Considering all kinds of activities, teachers not only differ to the extent in which they learn but also in the way they learn. Moreover, several individual and environmental variables seem to influence learning. For instance, sharing ideas with colleagues depends on the opportunities to meet colleagues but also on the willingness of teachers to share these ideas and experiences.

Concerning individual variables, the results aim at the significance of the learners' frame of reference. Teachers' preferences, beliefs and experiences play a very important role: they determine the choices teachers make, more or less purposefully, to execute certain activities and thus the way they learn. Furthermore, these individual variables seem to determine which specific activities are perceived to be leading to learning. Although individual factors play this important role, learning is also dependent on the school environment. As this research shows, the school organization has different opportunities to stimulate or impede learning.

In comparing these organizational variables with the model of the learning potential one may conclude first that conditions mentioned also refer to cultural characteristics. Social support by colleagues and management seems extremely important in this respect. In the model of the learning potential only the opportunities for contact and interaction are stressed. This study shows that opportunities are not enough to experience support, because support also has to do with the kind of interaction that takes place and the emotional response to it. Secondly, the model of the learning potential proposes that learning can be enhanced if learning opportunities are created. This research showed, however, that it is not sufficient to only create structural opportunities. As learning is also dependent on individual characteristics, learning opportunities have to fit these individual characteristics. As teachers with different orientations seemed to use the same opportunities differently, these results referred to a complex interplay between individual and environmental variables. The study shows, for instance, that only some teachers will indeed learn from executing school tasks so that requirng all teachers to execute such tasks probably will not enhance their learning.

This research also reveals that new developments play an important role as an impetus for learning on the job and so for improving professional practice. Next to keeping up with new developments, teachers have to learn how to cope with these developments in their daily practice. Although teachers consider implementing these developments as very important, transmission of new knowledge seemed prerequisite for this. So, in practice, old and new models of professional development walk alongside one another.

In interpreting these results one must keep some limitations of this study in mind. Teachers are asked about situations, activities, or experiences in which they learned. Although teachers were able to talk about this, they had severe difficulties in talking about the effects of their learning. Since this was not the object of the study they were not asked to elaborate on this. However, one might argue that learning was considered in a very broad way in this study. And also that it is much easier to talk about learning than to execute learning activities. So, this study only revealed perceptions of teachers: perceptions of learning as well as perceptions of influencing conditions. The consequences of this are that individual factors may be overlooked. For individuals, it is more easy to talk about environmental conditions which influence learning than to recognize what individual factors (*e.g.*, motivation, uncertainty orientation, or efficacy) are influential. Another consequence is that this study showed only perceptions of conditions whereas the availability of conditions within the school organization was not addressed. It remains unclear whether these conditions are really not existing, or not recognized by individual teachers.

Nevertheless, this study raises some themes and hypotheses for further research. First, the relationship between individual variables and learning needs more attention as well as the way different individual variables are mutually related. Next, more research is needed to investigate whether beliefs and learning activities change during the career. Do professionals have different beliefs concerning their professionality in different stages of their career? And do they perform different learning activities? Secondly, the role of the individual versus the role of the environment in learning seems a significant topic for research. For instance, one could argue that the amount of challenge is as much an environmental variable as an individual one. In this research, it was conceived of as an individual variable because teachers were able to create challenge themselves and they all experienced challenge to spring from different sources. Nevertheless, the environment has to offer these sources or the opportunities and support to create these challenge. Thirdly, the interplay between individual and environmental variables needs more attention. It would be advisable to research if individuals with different perceptions, preferences, and experiences value environmental conditions otherwise.

Finally, this study raises some discussion for professionals in general. Three issues will be discussed. First, learning on the job appeared to arise from solely undertaken activities as well as from activities which arise out of contact with clients or colleagues. The availabity of colleagues seems very important to learning as colleagues stimulate reflection and provide help and support. As much contact with colleagues takes place on an informal basis occurring in the course of daily activities, it may be important to provide and stimulate such opportunities for contact and interaction, either within the organizational context or in formal training or development programs. Moreover, providing opportunities is not sufficient for professionals themselves also need to be convinced of the utility of sharing and interaction. For many professionals, this will imply a change of professional attitudes as professionals are often educated and socialized to work independently and to be autonomous and individually responsible for their practice as well as for improvement of their practice.

Secondly, the question if all professionals need to learn on the job in order to improve the service they provide to clients depends on the view of the nature of professional knowledge. If professional work is conceived as grounded in highly rationalized knowledge bases, much emphasis is given to learning through transmission of information and new scientifically developed knowledge. On the contrary, if the emphasis is on knowledge about personal professional practice, learning is viewed as reflective practice and thus also takes place on the job to a certain extent. The aim is the development of skills that enables professionals to create knowledge needed to respond to diverse demands of practice. Therefore, theory is used as an important resource but "attention to practice is the means toward the development and refinement of theory" (Osterman & Kottkamp, 1993, p. 37).

The third issue is related to the previous one. As professionals are considered to improve continously the quality of their service, the difficulty is who determines what is best quality. Professionals, clients but also the society may have different ideas and opinions in this respect. According to professionalization processes, professions differ to the extent in which they are able to influence and shape quality-of-practice issues. Nevertheless, what constitutes best quality or best service will continuously be changing because of different beliefs and societal developments. So, professionals themselves will also have different opinions of what best service is and how it may be provided. As this research shows, professionals perform their jobs in a way that fit their beliefs and preferences. Therefore, improving service will always have to start somehow with clarifying these individual beliefs and preferences, so with practice.

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Using the Burke-Litwin Model as a Lens for Understanding the Implications of Action Reflection Learning™ as a Catalyst for Organizational Change

ARL™ Inquiry[1]

In this paper data on an Action Reflection Learning™ program are analyzed using the Burke-Litwin model for organizational change and performance. Preliminary findings suggest that the change process in this company followed the general pattern predicted by the model and that Action Reflection Learning™ functioned as a catalyst for the change process, providing a liberating structure . The categories of vision, human agency, learning, and informal organization are important to the story and not explicitly referenced in the model.

This paper uses the Burke-Litwin (1992) model for organizational change and performance as a conceptual framework for analyzing field data gathered in an in-depth case study of an Action Reflection Learning™ (ARL™)[2] program in one corporation. ARL is an executive development strategy that is often used to support organizational change in addition to individual development. At the heart of its design is an iterative process of action - through project work on actual problems - and reflection - separate, specifically designed opportunities to think about what took place (O'Neil & Marsick, 1994).

We have chosen the Burke-Litwin model as an analytical framework because it is a comprehensive model, derived from the literature on both research and practice on organizational change. The Burke-Litwin model distinguishes between transformational and transactional variables that affect individual and organization performance. Their model provides a useful analytical lens for our data because we are interested in whether or not ARL can be used to catalyze long-term transformational change.

The following research questions are addressed and discussed:

1) Using the Burke-Litwin model, what lessons can be derived from the research about ARL as a strategy for catalyzing and supporting desired changes, and for identifying transformational levers of change?

2) What critical ingredients in the ARL program, and the way in which they interacted with other initiatives or conditions in the company, contributed to catalyzing or inhibiting desired changes?

3) In what ways did leadership and management practices interact with one another, and with other transformational or transactional variables, to catalyze and support desired changes?

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[1] ARL Inquiry is a research group affiliated with Leadership International Management Ltd. In alphabetical order the members of ARL Inquiry are Robert Kolodny, Adjunct, New School for Social Research; Sharon Lamm, Doctoral Candidate, Teachers College, Columbia University; Victoria Marsick, Teachers College, Columbia University; Glenn Nilson, Eastern Connecticut State University, Judy O'Neil, Adjunct, Teachers College, Columbia University; Lyle Yorks, Eastern Connecticut State University. This article is based on data gathered by Lyle Yorks and analyzed jointly by the Inquiry. Lyle Yorks, Victoria Marsick, and Sharon Lamm took the lead in writing the paper.

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The ARL Program Being Studied and Our Research Methodology

The site for this study was a multi-national food products company striving to transform itself into a global organization. The company initiated ARL as a means for developing a global perspective and a global network of relationships among more senior operations managers around the world. The ARL intervention consisted of three programs which were held over a period of two years. Each program consisted of four week-long sessions held over a six month period in different worldwide locations of the company. The intervention was part of a sequence of initiatives directed toward supporting the vision of a global organization. The other initiatives, and their importance for the change process, will be discussed further below.

The data reported here were gathered through a participant observation design, supplemented by extensive interviews. A field researcher traveled with two of the three ARL programs and had access to all the activities that took place. Additionally, seventy-one formal interviews were conducted. A more extensive discussion of the methodology used in this study is available in Yorks, O'Neil, Marsick, Nilson, & Kolodny (1996).

Using the Burke-Litwin Model as a Conceptual Framework for Analyzing Our Data

As mentioned above, the Burke-Litwin (1992) model provides a comprehensive framework integrating the empirical research literature and practical experience. Burke-Litwin developed this model as a guide for both organizational diagnosis and planned organizational change It "portrays the primary variables that need to be considered in any attempt to predict and explain the total behavior output of an organization, the most important interactions between these variables, and how they affect change" (p. 529). Following open systems principles, Burke-Litwin define the external environment as the input, individual and organizational performance as the output, and a feedback loop that goes in both directions between the input and output. Throughput consists of ten organizational factors/variables. They distinguish these factors as either transformational or transactional stating that "By transformational we mean areas in which alteration is caused by interaction with environmental forces...and will require entirely new behavior sets from organizational members...By transactional we mean that the primary way of alteration is via relatively short-term reciprocity among people and groups" (pp. 529-530). Mission and strategy, leadership, and organizational culture are the three transformational factors. Management practices, structure, systems, work unit climate, task and individual skills, motivation, and individual needs and values comprise the transactional factors. The reader is referred to the Burke-Litwin (1992) article for more a more complete depiction of the model.

Before turning to our analysis a few preliminary observations on the Burke-Litwin model are appropriate. The components of their model have evolved out of practice, specifically their field experiences over a five year period as consultants to British Airways. Their intention in putting forth the model is to provide "empirical justification of what we clearly believe works" (p. 524). The Burke-Litwin model depicts hypothesized relationships among constructs supported by a number of empirical studies in which sets of these constructs were operationalized as variables. They define their constructs in ways that depict categories useful for qualitative coding. We compare their categories to our particular case.

The structural presentation of the model with its emphasis on highly analytical cause and effect language masks the nature of action within organizations. The form of the model which "specifies by arrows which organizational variable... influences more directly which other organizational variables" (p.527) leads one toward a view of the world in which variables are acting on variables in a way that potentially reifies the model [see Abbott (1992) for an elaboration of this point]. Burke-Litwin are clearly cognizant of the potential problems this poses. "...we are quite aware of the fact that models may only help us to understand reality; they do not necessarily depict it. With respect to our three transformational boxes, they can be thought of more realistically as being in the minds of organization leaders and as part of their behavior, not in organization categories" (p. 536). This point is significant because it gives emphasis to the factor of human agency in the discussion. "The primary way of [transactional] alteration is via relatively short-term reciprocity among people and groups. In other words, 'you do this for me and I'll do that for you" (p. 530). Here we get the image of real people having to think, act, and reflect in a world with complex properties. Still, in the graphic depiction of the model and the discussion of it, variables not people do the acting (Abbott, 1992).

We would expect that the narratives of specific interventions would always vary somewhat from a conceptual model. Further, the categories of any model of organizational change processes best remain "polymorphic, supple, and adaptable, rather than defined, calibrated, and used rigidly" (Wacquant, 1992). However, a number of narrative cases comparing events through the lens of the Burke-Litwin model might produce narrative generalizations across cases, shedding light on the role played by human agency.

Triggers and Outputs: The External Environment and Organizational Performance

The CEO of the company in question envisioned transforming what was a multi-national divisional organization into a global organization. Three aspects of the company's external environment were influential on the CEO's thinking: 1) many of the company's large industrial customers were global and expressing preference for dealing with global suppliers; 2) globalizing would allow the company to more effectively leverage its various products, positioning it in the marketplace in a way its competitors could not; and 3) the corporate parent, a huge conglomerate, had made a decision to divest itself of operating companies that were not core to its' primary business. Creating a fully integrated global company would increase attractiveness to buyers interested in entering the company's markets on a global basis and make it less likely that new owners would be able to sell off parts of the company as assets.

However, it would not be easy to realize the CEO's vision. There were strong "walls" separating the various operating units; walls rooted in different organizational histories as well as national cultures. The impending sale reinforced these walls, as management in the operating companies could not be sure the company would remain whole after the sale. The various parts could become competitors, or in some instances customers. The CEO believed that globalization was key to the long term viability of the company. The mission of the company was to become the world's largest and most profitable provider of their products and to have fun. The CEO knew the changes necessary to make the transformation could not be forced on the organization. The organization needed to accept the need for globalizing and learn its way through the issues involved in functioning effectively on a global basis.

At this writing the company appears to be well on its way to realizing this vision. A new global network structure has been put in place with members of the executive team heading up world-wide functions of operations, marketing and sales, finance, and development. A one company profit and loss statement is now being used in the company and there are numerous examples of cooperation across the global network. The company has just been sold as part of the parent's strategy of returning to a set of core businesses clustered around chemicals. Presentations to potential buyers were organized around the transformation to a global organization. The successful bidder is a large food products company for whom our subject organization represents a complimentary business. Initial signs indicate that not only will the projected business strategy go forward with little interference, but that the organizational transformation significantly contributed to an effective acquisition process that has been a win-win for both parties.

Currently the company is profitable and making a higher return than in the past several years. Management changes in one of the regions triggered by the changes in the organization have revealed long standing operational problems that have led to poor quality and customer service. These problems are being addressed through the appointment of a key manager from another part of the world. Only time will reveal the outcome but, the approach taken reflects the new globalized organization.

Using the Burke-Litwin Model, What Lessons can be Derived from the Research about ARL as a Strategy for Catalyzing and Supporting Desired Changes?

The narrative story of the change effort at this company can be summarized as follows -- changes in the external environment were influential in the shaping of the CEO's vision. The CEO pushed for a change in the mission and strategy. Both this vision and the strategy received organizational support through a four-and-one-half day search conference held in 1991 involving the top fifty managers in the company. During the conference small functionally mixed groups identified priorities and directions for globalization. One outcome of the conference was a marketing/communication task force that began organizing joint presentations from the operating divisions at trade shows. However, other task forces established at the conference lost momentum and little else happened.

An organizational culture survey documented the fact that enacting this vision and strategy required a significant change in the organization's culture. This survey surfaced three wide spread beliefs: 1) managers throughout the company did not believe that senior executives, with the exception of the CEO, really wanted globalization; 2) cooperation with other operating units would be penalized; and 3) significant development of competencies necessary to function in a global organization was needed. These competencies were teamwork, employee development, trust, leadership, communication, conflict management, and innovation and change.

The vice president for human resources and organization development believed that if transformational change was to occur in the organization "an intervention that impacted on the organization's culture and got people to change how they perceived their roles in the organization was necessary." Both he and the CEO agreed that an ARL strategy was the best hope for accomplishing this. Confronted with the results of the organizational culture assessment, and advocacy from the CEO and a consultant on globalization who worked with both the company and parent corporation, the members of the executive committee approved the ARL intervention.

The subsequent ARL intervention focused on those leadership and management practices that had emerged from the cultural survey. Simultaneously, issues of structure and systems were addressed in projects sponsored by members of the executive committee and worked by the ARL teams. Essentially, ARL was a vehicle for targeting changes in leadership and management practices and for opening up thinking about the potential for changes in structures and systems.

The categories of the Burke-Litwin model prove useful as a starting point for analyzing the story of this organization's transformation. The early stages of the change effort preceding ARL is a story of the CEO struggling with how to translate his vision of global organization into action. For two years before the beginning of the ARL effort, interventions were designed to build understanding and commitment to the globalization strategy (the search conference) and to assess the organizational culture. The assessment documented the need for transforming both how managers in the organization perceived their roles and for developing competencies necessary for playing different roles in the organization. During this time the vice president of human resources resisted pressure from his peers to implement a traditional human resource initiative (ie. a new performance appraisal system or compensation package--changes that would have operated at the transactional level of the model). During this time the human resources vice president also observed that team building efforts directed toward supervisory practices (also conceptualized by the model as transactional) "weren't working."

What is also very germane to the story, but not readily apparent in the Burke-Litwin model, are the subtle influences of human agency. Space does not permit a detailed discussion of the interactions between players that are critical to the story. The CEO and vice president for human resources played roles marked by opportunistic advocacy (Yorks & Whitsett, 1989). They built alliances in the organization for the idea of globalization among managers through carefully selected interventions to achieve this purpose, and continually interpreted events in a way that moved the process forward.

As we have seen, the activities targeted by this human agency fit the transformational and more influential transactional categories of the Burke-Litwin model. One exception is the idea of vision, which is extensively discussed in the leadership literature (Bennis & Nanus, 1985;

Zaleznick, 1989), yet finds no explicit mention in the Burke-Litwin model, (either as a separate category or as part of Mission/Strategy or Leadership). Yet, the CEO's vision was clearly an important factor in providing an orientation toward a global organization, frequently articulated in a highly energic way. Vision can be considered part of the leadership category, but so can mission and strategy. If, as Burke and Litwin suggest, the transformational factors can be more realistically thought of as being in the minds of organizational leaders than as organizational categories, at least in this case vision was as an important part of the story as mission, strategy, and culture and merits explicit mention.

What Critical Ingredients in the ARL Program Interacted with Other Initiatives in the Company to Contribute to Catalyzing or Inhibiting Desired Changes?

ARL functioned as a catalyst, creating something akin to a liberating structure (Fisher & Torbert, 1995; Torbert, 1991) within the organization stimulating interactions among several of the categories specified in the Burke-Litwin model. A catalyst is an agent that triggers and accelerates a reaction among elements critical to transformation. Fisher and Torbert define a liberating structure as "a type of organizing that is productive and at the same time educates its members toward self-correcting awareness" (p.7). This describes the kind of learning structure that was created in the ARL program with a focus on projects (with real payoffs for a globalizing company) and the extensive use of learning methods such as reflection and dialogue while working on projects. The effect we suggest was catalytic for change in the company.

The ARL program was not implemented as another series of programs, which in many companies come to be regarded as the "flavor of the month." Rather, there was a strategically compelling reason for doing it--ARL was linked to an ongoing campaign focusing on the globalization of the company.

The explicit theme of the ARL intervention was "Working The Global Network" accompanied by a logo that visually made the point. Participants were drawn from around the world, with project teams representing a diverse cultural mix. Locations for each week of the ARL program were in a different part of the world, with visits to local company sites. Hence, at all levels of design the program symbolically embodied the emergent vision and strategy of the organization.

The structure of the program provided participants with an opportunity to contribute to the specifics of the strategy, and the structure and systems necessary for implementing the strategy. An example of projects and subsequent recommendations serve to illustrate this point. One project was defined as "What radical changes can be made within [the company's] financial and administrative areas that will significantly reduce costs while providing acceptable levels of internal control and improving service to internal and external customers to the highest level?" In this team's final report they noted the need for change is rooted in the "changing environment." "[the parent] will no longer be a customer in the foreseeable future, and [we] must become more customer and market driven due to increased global competition." The project team understood an important question underlying the project as "How can [the finance function] become a strategic weapon by being a source of strength not possessed by our competitors?"

The recommendations that emerged from this team included changes in how the function was organized on a global basis and the kinds of systems necessary to make it work. In examining the work of this project team one sees 1) their understanding of the changing external environment, 2) the acceptance of the theme of globalization that is embedded in the program and linked to previous initiatives, 3) the necessity of thinking strategically about globalization, and 4) recommendations impacting both structure and systems.

Each week of the ARL program had a theme which reflected the leadership and managerial competencies identified by the cultural assessment. These themes were "The Global Perspective," "Communications and People," "Teamwork, Trust and Conflict Management," and "Leadership, Innovation, and Change." Learning activities were built into each week of the program reinforcing these competencies. Additionally, the methods of ARL, including reflection and dialogue, and stop/reflect, provided a means for having participants consider their learning around these areas based on how they were functioning as project teams.

For example, consider part of the stop/reflect dialogue in one team during the first week of the program:

> First Speaker (addressing the person who had run the meeting): Your process was good in getting us started, we got some direction, but don't make it a pattern.
> Second Speaker: Use brainstorming to give us equal time.
> Third Speaker: I agree for brainstorming
> Fourth speaker: we must make choices in how we work.

In another group a contest over leadership emerged between two of the most senior people during the first few days of work. One of the contestants for leadership said to the other "I am uncomfortable...you are leading, but not marshalling us in a direction" to which another, considerably more junior member of the group said "I think he's doing what you want to do." During an earlier stop/reflect this last speaker stated: "In terms of process I gave us a 2. I think we did a lousy job. No ARL techniques were used, not once. My ego got involved."

The ARL program was often initially experienced by participants as unstructured and mysterious. Participants were taken out of their comfort zone, placed in a setting in which they had to establish the norms, deal with questions that were outside of the cultural experience of the organization, and reflect on what was happening. The catalytic effect of ARL was akin to the unfreezing that Lewin (1946) writes about as necessary for the change process. In addition to facilitating interaction between the categories of the change model it raised the consciousness of participants and others in the organization of the inconsistencies between what is being promulgated and what is being practiced in the organization.

This highlights another factor, central to what ARL contributed to the transformation at this company, but not explicitly mentioned in the Burke-Litwin model, learning. Learning becomes central to the effective changes in schema of people as they encounter the issues embedded in the transformational (and transactional) categories of the model. The learning that took place in this ARL program was not only among the participants in the program, but among the participants and the members of the executive committee, who, in their role as project sponsors had to interact with the participants within the framework of the program.

One such learning event took place in the interaction between members of the first ARL program and the executive committee at the final presentations of the projects. As the presentations proceeded the members of executive committee began interpreting, challenging, and arguing among themselves. One participant recalls the event as follows. "I'm sitting around that circle when this event happened and it was ..such inappropriate behavior, and then I thought, boy, I guess my consciousness has been changed, because I wouldn't have noticed this six months ago." The group confronted the executives, stating "that's not how we do things in here." They also raised the issue of whether the executive committee was prepared to truly function as a global team. Instead of reinstating their power the executive committee members seem embarrassed, later confronting the consultants suggesting that they should have coached them more. More importantly, the event triggered a reflection on their own interaction and became part of the cultural story about the ARL program, remembered by the participants in that particular program and, more importantly, part of the lore of the executive committee.

Ultimately, culture change is reflective of collective learning. This is implied in the aforementioned statement by Burke and Litwin that the three transformational boxes in the model "can be thought of more realistically as being in the minds of organizational leaders and as part of their behavior, not in organizational categories" (p. 536). The executive who envisions him or herself as standing apart from the model, manipulating a system of variables without being changed in the process, will be disappointed.

In What Ways Did Leadership and Management Practices Interact With One Another, and With Other Transformational or Transactional Variables, to Catalyze and Support Desired Changes

Our data are limited to specific points in time. We cannot predict the long-term impact on the transformation of the organization's culture. Our data are mixed on this point. Nevertheless, our case study findings suggest that over time the reframing of leadership roles through ARL can influence changes in management practices, which then support changes in the climate of the organization, and over time, its culture (ARL Inquiry, 1996; Nilson, 1996). These changes begin to influence changes in other variables as projects are used to promote new ways of thinking, organizing, and operating for globalization. In this case the most significant changes were in the reframing of leadership roles toward global thinking, participation, and reflection. Management practices changed accordingly, although by no means universally.

Reflective of this reframing is one manager's comment: "It benefits the company...who cares who gets what and where." In a comment reflective of the changed culture, this same manager observes, "I see a lot more of it's not us and them over there [Europe].

The impact on the culture has been more openness, and a willingness to act in an empowered way. In the words of one person, echoed by others, "more people are more open...not open in the personal sense, but open as far as being able to express their opinion..."

The increased reflectiveness of the culture is not viewed by everyone as a positive. One participant noted that in "the culture of company...things get analyzed to death...Decisions get postponed...[ARL] has given us a good mechanism to build consensus and to discuss things but is it making...decisions any quicker?

When our data are considered in their entirety the strongest changes are in the global mindset of managers and in management practices and shift in climate. There is, however, a lot confusion in these last two areas, with some participants changing their practices and others not, and some regression from the practices. The net effect does seem to be real movement in the culture as a result of the ARL program.

However, it also appears that the ARL program was a critical, but insufficient part of the transformation process. As mentioned above, the third ARL program was followed by the implementation of a new global structure. This new structure formalized new leadership roles at the top of the organization. Additionally, the global profit and loss system was implemented, along with changes in other business systems. Currently a new personal development system (linked to the recommendations of one of the ARL project teams) and a new appraisal system that will standardize the performance management process on a global scale, are being implemented. These subsequent changes in transactional factors are the follow-through to put in place the strategy, leadership, and culture changes worked on prior to and during the ARL program. ARL has been a process enabling the transition between the changes in transformational factors and transactional factors that translate the more abstract characteristics of the former into the operational characteristics of the latter.

This transition was made easier by a final factor impacted by the ARL program and not explicitly cited in the Burke-Litwin model--the informal organization. The data suggests that one of the important outcomes of the ARL experience has been the establishment of close personal relationships among the top managers in the organization. This network of relationships has produced advantages for the organization in terms of realizing savings through moving product and equipment across regional lines. It has also, combined with the redefinition of the leadership role, created an infrastructure for the changing formal organizational structure and organizational culture.

Summary

The narrative story of our case seems to fit the general structure of the Burke-Litwin model, and the model provides a powerful lens for understanding the organizational change process and how ARL functioned as a catalyst for change in this organization. However, there are important aspects of the organizational change process that are not explicitly captured in the model. These categories are vision, human agency, learning, and informal organization. These categories are important to the present story and we suspect other change events as well.

The metaphors of catalyst and liberating structure seem very useful for thinking about the role ARL can play as part of a transformational organizational change strategy. However, to play this role it is important that ARL be linked to an ongoing process of change involving other interventions that address the transformational factors and be followed by subsequent initiatives that target transactional factors. Key elements in ARL functioning as a liberating structure are 1) projects linked to the newly emergent vision, mission, and strategy, 2) changes in leadership roles, and 3) learning around an informed view of the organizational culture and those management practices that need to be changed. The other key element in ARL functioning as a liberating structure is the emphasis on learning from the process--both learning about oneself and the organization. A key question for future research is how ARL might function in a context in which management was simply looking for changes of a transactional nature.

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The Effectiveness of Total Quality Management: A Response to the Critics

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A recent paper strongly berates total quality management, claiming it is a tool of management used to adversely manipulate workers in pursuit of corporate gain. This paper questions this supposition, arguing it is the abuse of TQM by management that is at fault. Effective TQM is based on four principles, customer satisfaction, continuous improvement, speaking with facts, and respect for people. It is the lack of the genuine respect for people that is the demise of most TQM initiatives.

A paper by Howell, Preston, Schied, and Carter (1996) was presented at the 1996 Adult Education Research Conference. It investigated the impact of total quality management (TQM) at a manufacturing plant in Pennsylvania. The study concluded that the workers were worse off after the implementation of TQM, with the workers being "subjected to internalized mechanisms of control," and "objects of the tyranny of management theory and management's economic agenda. They inferred that adult educators were a part of this tyranny, "allowing the corporation to meet their goals using education and training as a facade" (pp. 169-170).

The conclusion that management practices, specifically TQM, was the root of the abject manipulation of the workers is questionable. The purpose of this paper is to question this premise with a counterpoint. Namely, it was not the implementation of TQM that was the cause, but rather poor management and the misuse of TQM for corporate gain at the expense of the workers. This will be done by describing a more complete theoretical framework of TQM than was given in the Howell *et al* paper. A variety of examples where the implementation of TQM has been successful is given. Finally, a description of the implementation of TQM at one company using the principles of the TQM principles described in this paper is presented.

The Pros and Cons of Total Quality Management

Total quality, as a movement evolved primarily over the last thirty years. Its roots, however, penetrate the last 100 years of striving to improve first manufacturing, and then service. The five recognized gurus of the total quality management are W. Edwards Deming (Walton, 1986), Armand A. Feigenbaum (1983), Joseph M. Juran (1988), Kaoru Ishikawa (1985), and Philip B. Crosby (1979). Individually they molded the framework upon which present TQM practices are based. Collectively, they developed a conceptual framework that has evolved into a worldwide movement that some would call a transformation of every aspect of manufacturing and service. Hence, the term *total* quality.

The implementation of TQM in organizations continues to be strong. The annual report of employee training and development by the editors of *Training* lists TQM as the top initiative in 1995-96, with 49% of all organizations with 100 or more employees initiating TQM("Trends," 1996). While the manufacturing industry has consistently been a leader in TQM, with 65% of the companies implementing TQM, service industries like health services and public administration are actively implementing TQM (75% and 54% respectively). Large organizations (e.g., Federal Express, Ford Motor Company, Coca Cola, Motorola), smaller organizations (L.L. Bean, Wallace, Solectron), government agencies (U.S. Dept. of Agriculture, State of South Carolina, City of Phoenix), and many schools, colleges, universities, hospitals and other health services organizations are at various stages of implementing TQM (Strong and Ford, 1992, Lewis and Smith, 1994, "Training Today," 1995). Organizations receiving the Malcolm Baldridge National Quality Award have an average of six times the return on investment when measured against the Standard & Poor's 500 stocks indicator ("Training Today," 1995). Peters (1994) lists TQM as one of six of the most important concepts transforming organizations today (the other five are reengineering, leveraging knowledge, trust, the curious/adventurous organization, and the virtual organization).

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TQM is not without criticism, however. Zemke (1992), in an editorial on TQM coming under fire, identified five reasons why TQM is being increasingly criticized: A lack of focus on the purpose and goals of TQM, rigid zealotry and adherence to TQM even when it is not being accepted, emphasis of form over function, awareness of TQM over implementation of TQM, and viewing TQM as the fad or flavor of the month, with it being replaced with the next fad, e.g., reengineering and human performance management. The initiatives for implementing TQM are decreasing in some industries, with a drop of nine percent (9%) for all organizations from 1994-95 (58%) to 1995-96 (49%) ("Trends," 1996). However, some industries are increasing, e.g., wholesale/retail trade, from 24% to 44%; and health service, from 66% to 73%. Thus, TQM remains a highly influential management practice that warrants continued attention to its application, and the adherence to *all* the principles.

Theoretical Framework

The basic theoretical constructs of total quality management are well documented by many authors (Deming (Walton, 1986); Juran, 1988; Lindsey and Petrick, 1997; Voehl, 1990; Walton, 1989). Voehl (1992), and Lewis and Smith (1994) identify four fundamental principles or pillars that form the basis of the application of TQM within the organization: customer satisfaction, continuous improvement, speaking with facts, and respect for people.

Regarding customer satisfaction, the core purpose of any quality improvement process is to ensure that the needs and reasonable expectations of the customer are identified and satisfied. Serving the customers addresses three important questions: Who are our customers, what do they want/need, and what must we do to meet or even anticipate their needs? Once the customers' required needs are identified, work processes can be designed or modified to ensure these requirements are met.

Continuous improvement is both a commitment and a process. As stated by Gallagher and Smith (1997, p. 72), "the commitment to quality is initiated with a statement of dedication to a shared mission and vision and the empowerment of everyone to incrementally move toward the vision. The process of improvement occurs through the initiation of small, short-term projects and tasks that collectively are driven by the achievement of the long term vision and mission."

Speaking with facts, a phrase coined by Deming (Walton, 1986) is more accurately named data driven decision making, as it is based on two functions. First, data are collected so valid conclusions may be drawn, and second, decisions are based on the data. The idea behind this is that making a decision without information, or deciding on the basis of influence, hearsay, or a preconceived notion is undesirable.

These first three principles are cited in Howell *et al* (1996), but not the fourth principle. Respect for people is the acknowledgment that, while people work *at* an organization, they work *for* themselves, trying to create a meaningful and satisfying life. Recognition of this by the organization results in a framework that includes, according to Lewis and Smith (1994), (1) creating a sense of purpose in the workplace so that people are motivated to do their best; (2) keeping people informed and involved, showing them how they are a part of the bigger picture; (3) educating and developing people so that each individual is the best that he or she can be at what they do; (4) helping people communicate well so they can do their jobs with optimal enjoyment and peak effectiveness; and (5) delegating responsibility and authority downward so that people are not just "doing what we're told," but are taking the initiative to try to make things work better.

It is this fourth critical principle that is lacking in most unsuccessful TQM programs. This is the principle that professional practitioners in adult education and human resource development can most contribute. With the equal implementation of the first three principles and a genuine respect for all the people involved in the TQM process, TQM is the one management theory that uses a key premise of adult learning, i.e., the recognition of and respect for adults as individuals and learners.

The Implementation of TQM at One Company

To illustrate how TQM is being implemented within the framework of the four principles described above, following is a description of how one company is actualizing TQM. This should be read within the context of a progress report, as the TQM process was initiated in August 1996 and will continue for some time from now.

The plant processes citrus products, and is located in central Florida. It has been in operation for thirty years, and was owned for most of the time by a major food product company. They then sold the company to the present owners who have been in the citrus business for a number of years, having operated other plants in Florida. The present company has owned this plant for four years. They originally intended to have this plant be a processing plant for another packaging and bottling plant, but soon discovered this plant was operating well and set it up to do the entire processing and packaging operation, i.e., a self-sustaining profit center.

The plant employs about 130 people (management and workers) who work year-round. During the Winter and early Spring processing time the schedule is increased to a twenty-four hour, seven day work schedule. For the remainder of the year the schedule is a normal forty hour, five day work week.

Regarding the management of the company, the president was brought in by the parent company. Two other managers, an Executive Vice President, and Operations Vice President were hired from another well known citrus processing company and a household product company respectively. It is the Executive Vice President who launched the TQM program at this plant, having had previous positive experience implementing TQM. Two consultants, one being the coauthor of this paper (Lewis), were contracted to assist in developing and implementing the TQM program.

Some operational information is necessary. The waste of the juice extraction process, the pulp and peel from the citrus, is conveyed to a feedmill. It is then converted into pellets and sold as highly nutritional feed for cattle. The feedmill is a critical part of the plant because the waste from all the other processing lines goes to the feedmill. If the feedmill breaks down or is not productive, the entire plant may have to shut down. Problems here directly affect the rest of the plant. Some problems existed at the feedmill, so management requested the consultants to first work with the feedmill workers.

The consultants have met weekly for about twenty weeks. Their original plan was to conduct various sessions on team development, effective communication, and problem solving techniques. However, they quickly recognized that the workers not only were not interested in these topics, but had great suspicion of the consultants, i.e., "Why are you here? You were sent by management, and management does not listen to us; thus, this is another way to brainwash us and take control." As these questions and attitudes surfaced the consultants listened and, instead of initiating the original plan, they discussed these concerns with the workers, putting them in writing. The consultants then took the workers through an exercise on self-directed teams. At the conclusion of this exercise, they asked the workers to what degree did they want to take control of their actions, to more directly control the operational and managerial functions of their work. They said that, while they still had reservations, the process they had experienced so far had enough potential that they wanted to continue. From this point the workers began to take on some of the problems they had identified. Three will be described.

The first problem was high turnover in the feedmill. With the assistance of one consultant, the workers conducted a causal analysis (a fishbone diagram) to examine the causes and problems of turnover. The same day the analysis was done, management was invited for a presentation. The workers presented their analysis; the consultant only gave support. The presentation was well received and became an important turning point for the workers, because it was an indication that management was serious about this.

Management said they would get back with them shortly. When they did not respond after two weeks, the consultant questioned the Operations Vice President, who stated they were still thinking about the problem. The consultant requested that they tell the workers *something*, because it was an issue of mutuality, trust, and respect. Shortly afterwards they held a meeting and positive feedback was given.

From the turnover problem evolved a problem regarding the company's hiring process. Two issues surfaced that reflect the sensitivity the workers had about management practices. First, when they hired a person they did not tell the person a specific salary, but was only given a salary range by the supervisor. Notice of the hiring was sent to the Operations Vice President who established the salary, but approval of the hiring still required the approval of the Executive Vice President and the President before it was official. It was only then that they told the person the specific salary. This was typically over a week later.

Second, the hiring process was in part inadvertently controlled by the security guard at the front gate. People would come to the gate, ask the guard if they were hiring. The guard would say no and send them away. This frequently occurred after a friend working in the plant had told the person to come because the plant was hiring. This was particularly sensitive to minority applicants whom they would tell the company was hiring, and then were turned away at the gate.

In both issues management did not fully know these actions were occurring, and how the consequences of these actions adversely affected the attitudes of the workers. Because of these presentations, they are reviewing the hiring process at the time of this writing.

These first two problems centered on managerial practices. The third was a manufacturing problem that also exposed a related managerial issue, i.e., the management style of the supervisor and his actions in relation to the TQM process. A persistent problem in the feedmill is the control of the moisture level of the cattle feed pellets. If it is too high the pellets will break apart; if is too low the cattle will drink too much water after eating the pellets. Again, the workers with the assistance of the consultants conducted a causal analysis, and invited management in for a presentation. They were favorably impressed, and brought in the Quality Assurance Director to hear the presentation again. The Q.A. Director agreed with the worker's conclusion and developed a plan for frequent testing. The issue became who would do the testing, the Q.A. Director or the workers. The Q.A. Director was willing to have the workers conduct the tests. The supervisor, however, adamantly refused. This situation brought to the surface the issue of the workers not liking the intense watching of them by the supervisor. The workers went along with the supervisor's decision, but reluctantly. A core really did want to do the testing, but were being blocked by the supervisor.

Also at this time it was discovered that, when the consultants were not at the plant, the supervisor was making different decisions resulting in extensive inconsistency. The Supervisor, it was observed, was managing by manipulation and playing people off each other. The consultant tried to get him to attend a supervision workshop, but he refused ("I do not want to do role playing," he strongly stated.). The consultant even offered to go with him, but he again refused. To date he is yet to attend and this problem remains unresolved.

As stated above, this case study is a work in progress, and what has been described are three incidents illustrating the implementation of TQM, with the primary focus being a respect for all the people involved in the process. The consultants, with management's approval and encouragement, are working closely with the workers, serving as facilitators and coaches, giving them guidance in both the understanding of their problems, and the skills to describe them to management. This approach has proven effective as indicated by the acceptance of the process by the workers and management, the resolution of some longstanding problems that have been getting in the way of productivity, and a mutually beneficial work environment.

The process is not without its casualties. While the Executive Vice President has been the driver for the implementation of TQM, the Operations Vice President has not been a proponent, but accepted it because his boss wanted it. Such a dissonant attitude and relationship can only last so long, and recently the Operations V. P. resigned, choosing early retirement.

Summary and Conclusion

The interest in writing this paper began after reading the paper by Howell, Preston, Schied, and Carter (1996). As stated above, they argued that the TQM process is implemented under the guise of education and training, but is actually driven by a corporate policy to cut labor costs. What the management of the company did in Pennsylvania, described in their paper, is not new. Presently three forces are driving thousands of organizations, private and public, to reduce costs: increased competition, decreasing budgets, and increasing costs of fixed expenses (utilities, space, supplies, etc.). Further, for private companies shareholders are increasingly seeking a continuous stream of profit that too often results in short term gain (rising stock prices) at long term loss (reduced R and D and HRD funding). These forces are driving managers to extirpate what they perceive as excessive resources, which are often the people, using any measure that they deem rational to carry out their objectives.

Total quality management can be a highly effective tool to use for this adverse purpose. Identifying an overall mission and goals by management, justifying it by emphasizing its acceptance in order to counter increasing competition, and then establishing work teams and requiring them to develop "team driven" strategies to actualize the goals, diminishes the onus of responsibility for any changes management must make if they do not realize the goals. The managers at the Pennsylvania plant, described in Howell, Preston, Schied, and Carter (1996) were required to follow rigid standards to comply with the ISO 9000 criteria, the international standard for products and practices. These criteria focus more on output and the quality of the product, and not as much on the process of producing the product. Management's interpretation of the criteria, however, resulted in an arbitrary comprehensive testing of all employees, and the development of a two-tiered status for the workers, i.e., those who past the tests and those who did not. This decision was a decision by management who chose to use their adaptation of TQM to carry it out. Thus, it was the misuse and abuse by management of this plant, and not the TQM process that created the resulting demoralizing havoc among the workers.

In contrast, the management at the plant described in this paper, concentrated on similar goals, the increase of productivity within rigid standards, but without increased costs, and lower costs if possible. They implemented the first three principles described above (customer focus, continuous improvement, and decisions based on facts), but equally concentrated on the fourth principle, respect for people. The result was an increasing sensitivity of the worth and value of the workers, and the allowance and encouragement for their self direction in resolving the problems preventing increased productivity. This is the full use of TQM that, when collaboratively attempted, can result in positive outcomes for everyone.

The consultant (Lewis) that worked closest with the managers and workers at this plant identified twenty-two descriptors that collectively reflect the increasing mutual respect by managers and workers that is evolving through this TQM based process: the valuing of individual differences and worth, the attempt to enhance individual self-esteem, the attempt to provide necessary but not excessive direction, provide adequate resources to do the job, communicate with people on a timely basis, delegate appropriate authority with responsibility, respect people's time, respect other people's authority, look for ways to make jobs better, easier and interesting, provide environments for people to express views and feelings, listen and respond to people, provide appropriate feedback, recognize people's needs, stand up for people, respect individual privacy, respect personal obligations, acknowledge individual hardships, recognize accomplishments, provide opportunities for job skill development, provide opportunities for self-development, provide models for standards of excellence, provide an environment of trust with permission to fail, and emphasize relationships, respect and reconciliation. These characteristics are evident at the public and private organizations mentioned above. They are becoming increasingly evident at the central Florida plant. They are not yet fully evident, but the process for their actualization is in place and is functioning.

The pursuit of "quality" is a driving force of every person, of every organization. When individually perceived and defined, we strive to achieve what we believe to be a "quality life," maintaining "quality relationships," spending "quality time." Organizations also want to sell "quality products," provide "quality service," and do it within organizations recognized for their "quality work environment." Thus, while the growth and implementation of quality as a movement has lessened, the application of the concept is an integral part of our culture, our lives. Chang (1993) in an intense review of the literature on total quality management success stories, and various quality award criteria and certification guidelines around the world, identified ten "core threads" that are evident in successful TQM initiatives: an intense customer focus, hands-on involvement of senior management, deployment of strategic objectives, continuous process improvement, *empowered involvement of satisfied employees*, long term orientation, targeted measurement data, market responsiveness, *continuous learning and development*, and *internal and external partnerships*. We italicized the three "threads" that reflect a respect for people. These are the three that are most often not implemented. They are also the three most difficult to implement. The challenge is evident. Despite it being a process called total quality management, or any other name, to assure successful growth of both organizations and individuals, a genuine respect for people is mandatory.

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Fast Cycle Organization Development: Analysis and Assessment from an Organizational Learning Perspective

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This paper applies organizational learning theory to the examination of the emerging concept of "fast cycle" organization development (OD). It analyzes several OD interventions based on their potential to accelerate organizational learning cycles and, therefore, organizational change. It uses the strategic learning cycle model (Redding & Catalanello, 1994), to examine a series of OD interventions, assessing the degree to which each contributes to the speed, depth, and breadth of organizational learning. It discusses the potential use of learning cycle analysis to assess the impact of a broad range of OD interventions, to develop more potent intervention methodologies, and to provide insights into the role of the OD practitioner.

In recent years interest has increased dramatically in organization development (OD) interventions that can produce accelerated, fundamental, organization-wide transformation. Large group interventions, such as search conferences, conference models, and open space technology, seek to bring the "whole system in a room" in the effort to produce enterprise-wide change in a highly compressed time frame (Weisbord, 1992). Process reengineering begins by asking, "How would we do things if we were to start from scratch?" and concludes by redesigning business processes, often in less than six months (Hammer, 1990). Action science approaches, employing dialogue, inquiry, and reflection, seek to bring out and question the long held "undiscussable" assumptions that underlie business practices rather than waiting for survival-threatening crises to cause such questioning (Argyris, 1992; Senge et al., 1995).

Among OD practitioners, the descriptor of "fast cycle" is beginning to be used to distinguish a group of interventions that have the potential to produce accelerated organizational change when compared to traditional organization development methods. The term fast cycle has been in management parlance for the past decade. It commonly refers to the systematic reduction of the time span required to complete a single cycle of a core organizational process, such as bringing a product to market or processing an order (Stalk and Hout, 1990). The reduction of cycle times is a significant competitive advantage as organizations are required to face more dynamic and uncertain business conditions. Therefore, much of the discussion of fast cycle OD is focused on reducing the time needed to plan, conduct, and assess OD interventions. By reducing the cycle time of OD interventions, organizations should be able to increase their ability to produce high-speed, large-scale change.

This paper is based on the premise that organizational learning theory can provide considerable insight to guiding the development of OD practice and, in this context, to fast cycle OD. In an organizational learning sense, the terminology fast cycle connotes a different

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and distinct meaning than what is typically found in the general management discussions of cycle time reduction. From this perspective, organizational change is seen as the product of a cyclic process of collective learning. Various models of this cycle have been presented. All deal with a conceived plan, action, reflection, and new insights leading to new action (Dixon, 1995). Accelerating these cycles means accelerating organizational transformation.

This paper begins by providing a specific organizational learning cycle model, the strategic learning cycle model proposed by Redding and Catalanello (1994). This model proposes that three dimensions assess the degree to which organizational learning cycles contribute to organizational change: the speed, depth, and breadth of learning cycles. It will then apply this learning cycle framework to a series of OD interventions, and explore the potential of each to provide for fast, organization-wide transformation.

It is hoped the following discussion will lead to further empirical research regarding the relative contributions of OD interventions to the production of fast, fundamental, system-wide change. It seeks to inform practitioners in the practical considerations for selecting differing OD interventions, such as:

- Are certain types of interventions more capable of fast, fundamental, system-wide change than are others?
- What are the strengths and limitations of specific interventions?
- How might certain interventions be modified and adapted to increase their organizational impact?

It also seeks to contribute to understanding the need for reframing the role of the OD practitioner.

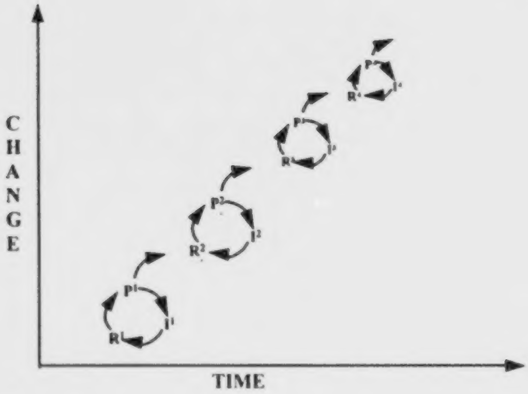
Strategic Learning Cycle

From an organizational learning perspective, organizational change is often represented as a collective learning process that parallels the process through which people learn from their personal experiences. Experiential learning has traditionally been represented as a cyclical process, moving from thought, to action, to reflection. Kolb (1984) represents experiential learning as a four-stage cycle of concrete experience, reflective observation, abstract conceptualization, and active experimentation. Normann asserts that the learning cycle process can be employed to describe the process of strategy development and execution:

> Strategic action is rarely a simple "first decision, then action." This "sequence myth" has done a lot of damage to many business companies. . . . Instead, we can observe how strategies evolve as a result of a process that has at least three key elements: the formulation of a vision, action based on that vision, and interpretation and reflection based on the action and its outcome. Then the sequence starts again. The vision is further clarified, new action is taken, there is food for more reflection, and so on. There are few instances of strategic change that are not best described in terms of such a spiraling process (1985, p. 22).

In *Strategic Readiness: The Making of the Learning Organization*, Ralph Catalanello and I offered a three-phase "strategic learning cycle" framework. (See Figure 1.)

Figure 1
Organizational Learning Cycle Model



This framework postulated that the speed with which organizations can produce large-scale, strategic change depends directly on their ability to learn through cycles of organizational learning.

Once the process of strategic change is viewed through the lens of a learning cycle perspective, an obvious question arises, "Is it possible to accelerate strategic change by accelerating learning cycles?" An obvious answer also comes to mind: speed up the learning cycles. That is, if it takes two years to plan, implement, or reflect strategic change, reduce that time by half or three-quarters. However, the Strategic Learning Model suggests that simple speed is only one of three factors that need to be considered when seeking to accelerate organizational learning cycles. Two other dimensions, depth and breadth, also need to be considered. Each is described below:

Speed refers to the length of time it takes to complete an iteration of the learning cycle. Each time that the organization plans an intervention, implements the intervention, and then stops and reflects on what has worked and what has not worked, a cycle of organizational learning occurs. If a firm can get around the cycle faster, it will have increased its chances to learn. However, speeding up cycles does not increase learning, only the opportunity to learn.

Depth refers to the transformative quality of organizational learning that occurs as a result of each learning cycle. Taking the lead of Argyris and Schon (1978), we distinguish three levels of learning:

Level 1 Learning: Learning that provides simple solutions to the problems and roadblocks encountered, resolving obvious symptoms. Argyris and Schon (1978) call this "single-loop learning."

Level 2 Learning: Learning that provides deeper, systemic solutions to the problems and roadblocks encountered, often resulting in the need to modify the fundamental norms, management practices, procedures, structures, and processes of the organization. This is Argyris and Schon's "double-loop learning."

Level 3 Learning: Learning that serves to identify weaknesses with and improve the learning process itself. Argyris and Schon label it "deutero-learning."

The major difference among the three levels of learning is the quality of questioning that occurs during the reflection phase. At the first level, questioning is limited to fine-tuning the original plans in response to the impediments encountered. As a result, first level learning deals with fixing the immediate problems; it may not confront the root causes of the problems. At the second level, deeper questions are raised regarding pervasive, systemic issues, such as organizational norms, management styles, information systems, processes, and procedures. As a result, organizations can learn about themselves as complex systems; and fairly routine problems, when understood as symptoms of deeper causal factors, can provide the basis for truly strategic learning. At the third level, questions are raised about the learning process itself, exploring how the organization is able to learn. This third "learning to learn" level provides the possibility for the deepest form of organizational learning, increasing the core capacity of firms to learn, regardless of the strategic issue at hand.

Breadth refers to the degree to which the learning process affects the organization as a whole system. Several questions need to be answered to determine the breadth of learning cycles:

- To what degree is the full range of stakeholders and structural units of the organization affected?
- To what degree are various organizational subsystems affected, including information systems, marketing, technology, research and development, management practices, culture, rewards and recognition?
- To what degree are the key strategic goals and challenges of the organization affected by the learning process?

The three dimensions of speed, depth, and breadth have been discussed as discrete entities. However, they are interrelated. If there is increased speed (that is more iterations of the learning cycle), it is more likely that the firm will realize the limitations of Level 1 solutions that only address the symptoms and not the underlying causes. As problems continue to persist from one iteration to the next, there is an enhanced likelihood that the firm will appreciate deeper learnings, Levels 2 and 3, that get below the surface, surfacing unstated assumptions and sounding out the underlying reasons for the difficulties. Moreover, as more profound learnings occur, the solutions will deal with the more systemic issues of the organization. And since systemic issues often have an impact upon a wide range of organizational issues in varying parts of the firm, the new knowledge will more easily transfer to other issues, or other parts of the company.

Learning Cycle Analysis of OD Interventions. One way to approach the notion of fast cycle OD is to explore the degree to which varying interventions are designed to promote the speed, depth, and breadth of learning cycles. Fast cycle OD interventions can be contrasted to traditional OD interventions based on the degree to which they purposely accelerate the rate of organizational learning to produce organizational change. (See Figure 2.)

Figure 2
Accelerating Organizational Learning through Fast cycle OD

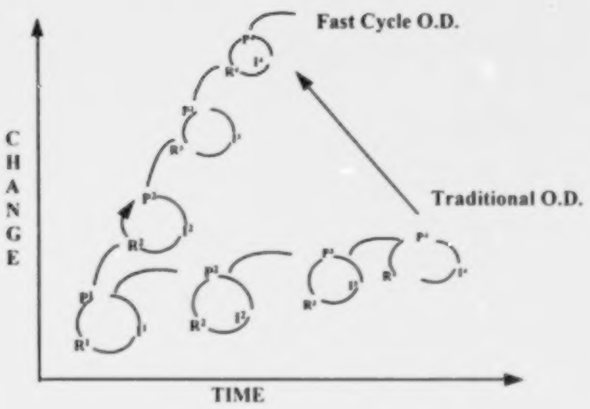


Table 1 offers an analytical framework that characterizes interventions as "low impact," "moderate impact," or "high impact" based on the degree to which they are designed to affect the speed, depth, and breadth of learning cycles.

Table 1. Framework for Analysis of Speed, Depth, and Breadth of OD Interventions

	Low Impact	Moderate Impact	High Impact
Speed	Interventions are designed to be linear and non-iterative. Interventions are generally one time events or processes.	The intervention may occur as a series of iterative learning cycles, but this is not an avowed purpose of the intervention.	Interventions are purposefully structured as process of discovery, planning interventions, taking action, reflecting, and based on learning.
Depth	Interventions tend to operate within the framing assumptions of the organization. As a result, most learning can be characterized as Level 1 (single-loop).	Interventions do not seek to produce Level 2 learning (double-loop) or Level 3 learning (learning to learn). However, the design has elements that might result in Level 2 or Level 3 learning.	Interventions are structured so as to directly engage underlying organizational assumptions/governing variables, seeking to produce Level 2 and Level 3 learning.
Breadth	Interventions are limited to specific structural units, subsystems, and issues.	Interventions may have a fairly wide impact across the organization as a system, but this is not a purposeful aim of the intervention.	Interventions directly engage organization as a whole system.

A low impact characterization indicates that the intervention is not directly or indirectly designed to improve the dimension. A moderate impact characterization indicates that the intervention is indirectly designed to enhance this dimension. A high impact characterization indicates that the intervention is purposefully intended to enhance this dimension of the learning cycle.

Table 2 applies this analytical framework to characterize four popular OD interventions. Two interventions, future search conferences and the conference model, were selected because they are commonly referred to in a discussion of fast cycle OD; two interventions, action learning, and action science, were selected because they derive from an organizational learning foundation.

Table 2. Relative Speed, Depth, and Breadth of Various OD Interventions

Intervention	Proponents	Speed	Depth	Breadth
Future Search Conference	Weisbord (1992)	Low	Moderate	High
Conference Model	Axelrod (1992)	Moderate -High	Moderate	High
Action Learning	Revans (1982) Marsick, *et al.* (1992) Pedler (1992)	High	High	Low-Moderate
Action Science	Argyris, 1992 Argyris *et al.*, (1985) Argyris and Schon, (1978)	Low	High	Low

The characterizations of each intervention displayed in Table 2 are purely arbitrary, based on the personal judgment of the author. However, in all cases, the interventions have been analyzed based on the prescriptive models offered by major proponents. The following describes the author's justification for each of the ratings.

Future Search Conference. According to Weisbord (1993), the future search conference's power lies in its ability to bring "the whole system in the room." As a result, the breadth dimension is labeled as high impact, because future search seeks to engage the fullest possible range of stakeholders, business units, subsystems, and issues. The approach is portrayed by Weisbord as a non-iterative, linear, plan-implement process. As a result, speed is rated as low impact. (Note: At first glance, this characterization might seem inaccurate since the intervention itself occurs over a highly compressed time frame. However, from an organizational learning point-of-view, the effect of speed on organizational learning cycles would be seen as low impact since the process is not envisioned as a process of discovery through learning cycles.) Future search conferences, by design, seek to search for "common ground," avoiding deep questioning of mindsets and perceptions. Yet, since they bring together an intentionally diverse set of perspectives in an intense, interactive process, there is an indirect impact in which the framing assumptions underlying the business might be surfaced and explored. As a result, depth is rated as moderate impact.

Conference Model. A cousin of the future search conference, the Conference Model is also viewed as high impact in the breadth dimension. Yet, because of the iterative nature of the design (multiple conferences are held over a series of months, with planned actions taken in between sessions), speed is rated as moderate impact or high impact, depending on how the intervention is implemented. If the actions taken between sessions are designed to merely implement an established plan of action, speed would be assessed as moderate impact. However, if the actions are taken as part of an intentional process of discovery and assumption checking, speed would be seen as high impact. As with future search, the search conference model is rated as moderate impact in the depth dimension.

Action Learning. Action learning is a structured, team-based process of "learn by doing" (Revans, 1982). Popular in Europe for many decades, action learning is just beginning to find widespread acceptance in the U.S (Marsick et al., 1992). The analysis of this intervention is made difficult by the sheer range and variation of applications of the basic design (Pedler, 1992). It is typically organized as a series of iterative learning cycles that occur within a relatively compressed time frame (often less than six months). Therefore, speed is rated as high impact. From the beginning, action learning is envisioned as a process of inquiry aimed to discover solutions to complex problems that have no known solution. In addition, teams (traditionally called "sets") are aided by a "set adviser" or "learning consultant" who seeks to help the team raise "discriminating questions" and question unstated assumptions. Teams are also assisted in examining their own learning processes. As a result, depth is characterized as high impact because of action learning's attempt to enhance Level 2 learning (double-loop learning) and Level 3 learning (learning-to-learn). Action learning teams typically focus on immediate issues or problems. As a result, efforts are frequently limited in scope and restricted to specific organization stakeholders, units, subsystems, or issues. Consequently, breadth is rated as low impact to moderate impact, based on the degree to which action learning is deployed across the organization.

Action Science. Action science refers to a methodology developed by Argyris and Schon (Argyris et al., 1985) designed to explore the assumptions and variables that silently influence human action in organizational settings. Commonly employed interventions include the left-hand column process, dialogue facilitation, and the ladder of inference (Senge et al., 1994). Depth is rated as high impact, because of the intent to promote Level 2 and Level 3 learning. The notion of the learning cycle is a key component that informs action science methods; however, efforts do not generally seek to accelerate the number of cycles that occur over a period of time, although this is likely an indirect result. Therefore, speed is viewed as moderate impact. Action science interventions are often highly focused on the microscopic details of human interactions, such as one-on-one conversations or small group discussions that do not produce the desired results. As a result, breadth is seen as low impact, since action science purposefully does not engage the whole organization as a system.

Conclusions and Discussion

This paper demonstrates how a learning cycle framework derived from organizational learning theory can be used to analyze and compare OD interventions. It is believed that this framework offers an important contribution to the emerging understanding of fast cycle OD. Envisioning fast cycle OD as a series of interventions with reduced intervention cycle time appears to be of limited usefulness. Such a conception of fast cycle OD does not capture the impact of interventions upon desired organizational outcomes. Moreover, it does not represent the multi-dimensional nature of organizational change, in which the speed, depth, and breadth of interventions need to be considered to determine the capability of the intervention to produce high-speed, system-wide change.

There are several significant limitations to this paper. The assessments are admittedly arbitrary, reflecting the author's personal judgments. A more rigorous, empirically-driven application of the organizational learning cycle model to OD interventions is an important next step. Such a research agenda might be able to quantify the impact of OD interventions upon the production of fast, system-wide transformations. Moreover, only four different interventions were examined. Additional insights would probably derive from examining a broader cross-section of OD methodologies, such as process reengineering, sociotechnical systems design, appreciative inquiry, and total quality management.

The analytical process described in this paper has important implications for practitioners regarding the selection and implementation of OD interventions. For example, it may be possible to modify several commonly used intervention methods to enhance the speed, depth, and breadth of learning. For example, those employing action learning approaches might explore ways to structure interventions as a systemic process, thereby increasing the breadth of the intervention. Those applying search conference methods might want to explore ways to use future search as part of an iterative discovery process, thereby increasing the speed of the intervention. Such a process might result in a new generation of OD interventions that, by incorporating the strengths of various intervention methodologies, seek to enhance simultaneously the speed, depth, and breadth of organizational learning. It may also suggest a reconception of the purpose of the OD practitioner. From an organizational learning perspective as presented here, the primary responsibility of the OD practitioner is to enhance the speed, depth, and breadth of learning cycles. Such a redefinition of the OD role might challenge many traditional views of the role.

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Intervening to Align: Approaches to Improve Organizational Alignment

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High-performing organizations are well aligned, with strongly linked strategies, structures, and cultures. Current theoretical perspectives of organizational alignment might guide the practical choice of intervention approaches and strategies. The author presents a five-step alignment process based upon previous research and theory and illustrates how sociotechnical systems, management technology, and large scale interactive process approaches address organizational alignment. Practitioners can leverage the LSIP strengths of maximum participation, collaborative decision making, and rapid deployment to design and implement technical and cultural systems that increase organizational alignment and performance.

In an environment of increasing competitive pressure, globalization, and technological change it is a truism to say that organizations are complex. Despite our growing understanding of this complexity, we still struggle with the questions of how to manage and intervene in organizations to obtain high performance. With so many competing demands, the myriad people, processes, activities, and cultural components of an organization often end up working at cross purposes. Organizational health requires harmony, and organizational performance requires efficiency. The concept of organizational alignment embodies both of these ideas.

This article presents current theoretical perspectives of organizational alignment and shows how theory might guide a practitioner's choice of intervention techniques and strategies. It also introduces a process model for improving organizational alignment based upon the theory. A concluding section illustrates the effectiveness and usefulness of large-scale process technology in improving organizational alignment, as well as facilitating collaborative organizational change.

What is Organizational Alignment? Theoretical Perspectives

Webster's dictionary defines alignment as "the proper positioning or state of adjustment of parts in relation to one another." In the organizational context, alignment is the degree to which an organization's strategy, design, and culture are cooperating to achieve the same desired goals (Semler, 1996). It is a measurement of the agreement or relative distance between several ideal and real elements of organizational life. Strong alignment requires agreement, rather than conflict, between strategic, structural, and cultural variables. Almost by definition, an organization that is well aligned is an efficient organization. Just as misalignment of the wheels of an automobile causes inefficiency in its driver's efforts to move in a straight line, misalignment of an organization's internal guidance systems causes inefficiency in its attempts to achieve its goals.

The concept of alignment is not new. Nadler and Tushman's (1989) congruence model of organization behavior was first published in 1979 and adequately represents the core of nearly all later discussions of organizational alignment. Later research has offered additional information that expands the power of their theory and extends the concept of alignment into improved organizational change models. Until recently, however, little theoretical work has been done to expand understanding of alignment in the behavioral sciences (Semler, 1996).

Most work that relies upon the idea of organizational alignment emphasizes either technical (Beer, Eisenstat, & Biggadike, 1995; Pasmore, 1988; Rummler & Brache, 1995) or cultural (Bennett, Fadil, & Greenwood, 1994; Kotter & Heskett, 1992; Tosti & Jackson, 1994) alignment aspects, but rarely combines both.

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Blending technical or structural aspects with social or cultural aspects offers a more balanced and complete view of alignment that can show practitioners how to improve alignment within their client organizations (Pasmore, 1988). Semler's work (1996) offers a theoretical framework for this balanced sociotechnical view of alignment. Within this theory, organizational alignment is defined as:

> The extent to which there is agreement between strategy, structure, and culture within an organization. This agreement creates an internal environment that facilitates achievement of the organization's strategic goals by removing internal barriers to cooperation and performance that would otherwise reduce the efficiency and effectiveness of work toward those goals. (p. 7)

The broad concept of organizational alignment operates in six distinct but interrelated aspects:

- *Environmental alignment*, representing the appropriateness of the strategy or vision to the conditions of the organization's external environment,
- *Values alignment*, representing the agreement between the organization's cultural values and the strategic goals or vision,
- *Norms alignment*, representing the degree of support that the organizational behavior norms lend to the planned behaviors required to implement the strategy,
- *Process alignment*, representing the strategy-driven design and operation of organizational, group, and individual job processes,
- *Reward system alignment*, representing the agreement between the policies, procedures, and compensation systems that encourage or inhibit individual behaviors and the organization's strategy, and
- *Performance alignment*, representing the degree of similarity between actual organizational behavior and the strategic ideal or vision (Semler, 1996).

Alignment is not a static phenomenon. Once an organization has achieved strong alignment in all six aspects, it will still have to reassess and maintain its vigilance. Beer, Eisenstat, and Biggadike (1995) emphasize that realignment is necessary every time that there is a significant change in the organization or its operating environment. Organizational culture is a way of maintaining and transmitting the values, norms, and practices that have been successful in the past (Schein, 1990). Kotter and Heskett (1992) point out in their research on organizational culture that organizations that were previously star performers lost their star status when market conditions changed but the organizations' cultures kept them doing things in the same ways as before. A systematic process to ensure continuing reassessment of external and internal conditions is a requirement for a self-aligning organization.

Particular characteristics of strong alignment are (a) the feeling of collaborative action and mutual support of members within the organization (Bennis, 1966; Kiefer & Stroh, 1984), (b) the sense of a mutually defined and organizationally shared vision (Dannemiller & Jacobs, 1992; Weisbord & Janoff, 1995), and (c) work systems that are intentionally designed to be compatible with each other, with the social aspects of the organization, and directed toward achievement of the strategic vision (Juran, 1992; Rummler & Brache, 1995). These ideas represent the heart of alignment--that the members of the organization can work together in common-sense systems to reach a preferred future that they have envisioned.

Why Should We Want Alignment?

Alignment represents the social health and the technical efficiency of the organization at its highest level of performance. When alignment within each of the aspects is strong the organization's members are:

- Focused on the right strategy for the organization's environment,
- Working collaboratively and enthusiastically toward that strategy or vision,

- Working in mutually supporting and efficient processes,
- Rewarded for behaviors that support the strategy, and
- Achieving progress toward the vision they created for their organization.

Alignment is not itself performance. It is a measurement of cooperation and agreement. By improving alignment an organization can increase its efficiency and more easily reach its performance goals. Increasing alignment removes barriers to effectiveness at the levels of individual, group, intergroup, and organizational performance (Kiefer & Stroh, 1984; Pasmore, 1988). Strong alignment is desirable because it serves the good of the organization and its individual human members.

How Can We Improve Alignment?

Organization development practitioners and managers can gain some practical guidance from the theories about alignment. Good theory can help them select appropriate intervention approaches to improve alignment. There are many different types of interventions. OD practitioners often group these into categories based upon level of effect. Whole-organization interventions have the most impact on organizational alignment, although group and inter-group interventions can also play a useful role in improving alignment.

Practical implications of the theory. The current theory about organizational alignment provides three key implications for managers and consultants working with alignment. Each of these major implications derives from the complex nature of the organization as an interdependent system. Attending to these implications can help practitioners select and design effective interventions.

- Strategy, structure, and culture are interdependent. A change in one will cause changes in the other two. Intervention approaches must take the entire system into account to prevent improvement in one area from suboptimizing and causing decline in other areas.
- Conversely, the systemic nature of alignment provides opportunities for change reinforcement. An intervention strategy that includes structural, cultural, and strategic supports for the new behaviors and relationships gains a synergistic effect that one-dimensional interventions lack.
- Intervention approaches must balance acceptability with new behavior modeling. Interventions that match the values and norms of the current organizational culture will gain greater initial acceptance, but may not model the changes in behavior required to align system components. Interventions that model the new behavior may not be initially acceptable to organizational members. Practitioners must balance these factors.

Interventions. Interventions at different levels in the organization serve different purposes in improving alignment. Group-level interventions are most appropriate for addressing problems or improvements in a process or closely related set of processes under the "ownership" of an intact group (Beckhard, 1969; Harvey & Brown, 1988).

Intergroup-level interventions are most appropriate for resolving issues of power, cooperation, misperception, and miscommunication among groups within the organization (Beckhard, 1969; Harvey & Brown, 1988). The objective of intergroup alignment interventions is to help the client groups develop "a common database of strategic information" (Jacobs, 1994). This common pool of information and understanding helps the groups' members to understand each other's work and to find the common ground for collaborative action.

Whole-organization interventions are generally the best means of addressing the complexity of simultaneously aligning strategic, structural, and cultural aspects of the organization. Alignment operates within the level of the organization at which the design, flow of information and resources, and overall context for interpersonal behavior and constructed meaning is set (Harvey & Brown, 1988). Whole organization interventions address the organization as an entity and are, therefore, most useful for improving alignment.

The Alignment Process.

A five step process is useful for planning organizational alignment interventions (Figure 1). The process serves as a guide for the design and implementation of well-aligned, high performance work systems, and reflects the theoretical implications previously described.

Step 1: Calibration. Alignment implies that strategy, structure, and cultural characteristics are directed toward mutual ends. The first requirement of the alignment process is to determine what that direction should be. Just as the test and measurement instruments of medical specialists, engineers, and technicians in other fields require periodic calibration and resetting to a standard zero point, the *organizational zero point* is the "true direction" for organizational performance.

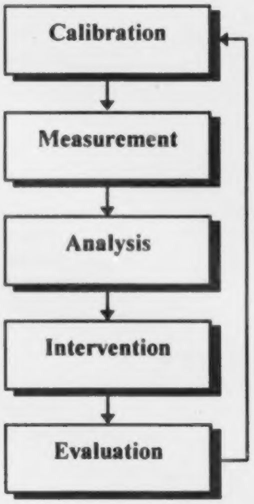

Figure 1. The alignment process.

The calibration information will typically come from the organization's strategic assessment and planning work (Gephart & Van Buren, 1996; Wall & Wall, 1995). It provides the reference for organizational performance criteria, goals, strategy, and values in relation to the organization's external environment. Once executives and OD consultants have identified the best overall direction for organizational performance, the next step is to determine the current state of alignment.

Step 2: Measurement. The calibration and measurement steps of the alignment process will determine what components of the organization offer the greatest opportunity for improved alignment. Before decision makers can determine how to intervene to improve alignment, they have to understand the organization's current state of alignment. In order to gain this understanding, OD practitioners must measure the current state of alignment in each of the relevant aspects. Organizational decision makers must set some criteria for measurement of alignment so that they will be able to gauge improvement or decrease in alignment after intervention. The basic requirements for such criteria are that they be observable, relevant to performance, and reflect the direction provided by the zero point. Each organization may differ in the specifics of these criteria.

Currently there are few, if any, adequate measurement instruments for assessing organizational alignment. Measurement of alignment often defaults to systematic observation and questioning of employees about how goals are pursued, work accomplished, and performance barriers identified and removed. Assessment of each the six aspects of alignment identified in Semler's (1996) theory can help practitioners get a grasp on current synergy of goals, norms, processes, reward systems, and performance. Measurement can take the form of targeted climate assessments, structured observation, focus-group discussions, or a number of other techniques appropriate to the client organization's culture and needs. Consultants and assessment participants compare current practices and activities against the zero point identified in the calibration step to determine the degree to which these elements are contributing to performance directed toward the zero point requirements.

Step 3: Analysis. With an understanding of the organizational direction or zero point and an assessment of the current alignment of the organization, executives and OD practitioners can take the next step. This requires them to generate intervention options and to determine what action they should take to improve alignment. Swanson's (1994) work on analysis for performance improvement can provide valuable guidance for this step.

A cost-benefit analysis of different options can be very helpful in this stage. Performing a cost-benefit analysis forces the organization to quantify the effects of misalignment and current levels of performance, as well as the possible results of improving alignment. Taking this step makes subsequent evaluation of interventions much easier and more convincing. In the analysis step is also the contracting between management and its chosen OD consultants, using the cost-benefit analysis and option descriptions as the basis for the contracting. The analysis step is the preparation phase for the methods that the organization will use to improve alignment.

Step 4: Intervention. The next step in the alignment process is the intervention. The intervention step includes the design, development, and implementation of the intervention or interventions. The intervention approach selected to provide a solution may be a "pure" OD approach, or the organization's needs may make a combination of methods attractive. Sociotechnical systems or large scale interactive process methods are often used as primary alignment approaches. The most important factor to consider for the purposes of organizational alignment and high performance is the ability of the intervention approach to address the strategic, structural/process, and cultural aspects of alignment simultaneously. This requires a complex and well-planned intervention strategy, and is not easily accomplished.

Many change consulting practitioners also recommend building organizational support for change as a preparatory step to the actual intervention (Dannemiller & Jacobs, 1992; Gephart & Van Buren, 1996; Pasmore, 1988). This is an important step in alignment interventions because of the broad organizational scope required to align different components of a complex sociotechnical system (Nadler & Tushman, 1989).

Step 5: Evaluation. Upon completion of the intervention, or as part of a complex intervention strategy, the alignment intervention team should evaluate the effect of the intervention. This helps the organization learn to what extent the intervention actually worked and provides insight into both the alignment process and the state of alignment within the organization.

Evaluation techniques take the same form as the measurement techniques used earlier in the alignment process (Swanson, 1994). The measurement criteria from the previous step serve as the baseline against which to compare the post-intervention conditions. The evaluation step outputs also provide the information inputs for the next cycle of the alignment process.

Intervention Approaches to Alignment

There are a variety of intervention approaches that can be effective and appropriate for improving alignment. I have presented only a categorical survey of them here. Some approaches are classic OD interventions and some are more akin to management techniques. Regardless of their origins, they offer practitioners with an introductory menu of methods for improving organizational alignment within their client systems. These interventions fall into three major categories: sociotechnical systems (STS) approaches, strategic management techniques, and large scale interactive process (LSIP) approaches.

Sociotechnical systems (STS) approaches. Sociotechnical systems (STS) redesign is an approach that works to improve the social and technical systems of the organization concurrently (Pasmore, 1988). The intentional design of the organization's process structure helps to improve the alignment among processes and with the overall strategy. A key component of STS work is the mutual support that technical and structural systems can provide to social or cultural behaviors, and vice versa.

Redesign of reward systems and work processes is often a part of STS approaches.Reward systems redesign attempts to change norms by aligning the reward systems with the organizational strategy (Bechet & Walker, 1993; Britton & Ellis, 1994). Reward systems, including compensation, recognition, discipline, and promotion, have a strong influence on behavior. Intentionally designing these systems to support the behaviors required by the strategy is a method that is often effective in changing norms.

Sociotechnical system process interventions include the well-known business process reengineering (BPR) (Hammer & Champy, 1993) and Total Quality Management (TQM) intervention strategies (Deming, 1986; Juran, 1992). The organization process redesign technique offered by Rummler and Brache (1995) takes basic STS redesign a step farther by adding a systematic method to create a cascade of linked processes that all contribute to overall performance.

Some advantages of STS approaches include their attention to both technical and social systems. Approaches that address only one of these two systems often ignore the interdependence between them and show poor results. STS interventions are also thorough and proven intervention strategies. Their disadvantages are that they do not automatically provide for broad collaborative participation in the redesign process (and therefore wide acceptance) and that they are complex and slow to implement. The chief criticism among executives is that STS approaches are too slow for the competitive environment (Jacobs, 1994).

Strategic management approaches. No matter how internally well aligned an organization may be, if the organization's strategy is not appropriate to its environment then alignment will only help it to fail faster. Most management techniques focus on improving the quality and effectiveness of strategy development and implementation as a means of better aligning the organization with its environment. Most management techniques can be differentiated from STS methods by their focus on technical solutions with relatively little consideration of social effects of the intervention approach.

Strategic planning processes may attempt to increase alignment between strategy and culture by using a quick assessment of the organization's core values to determine whether the culture will support the strategic directions they have tentatively selected (Pearce & Robinson, 1994). The assessment serves as a cultural double check on the assumptions of the management team. Many methods use teams to decentralize planning and improve organizational responsiveness (Pasmore, 1988; Wall & Wall, 1995).

Arthur Harkins (1996) at the University of Minnesota has developed a concept for using a *virtual learning organization* to assess the organization's environment and to conduct future simulations. The simulations would be linked to real time information sources via the Internet or other electronic means. Individuals could also add their own information to the database using input rules and make up fictitious data for simulation purposes. Drawing on the work of Peter Senge and others (Argyris & Schön, 1978; Senge, 1990; Watkins & Marsick, 1995), the results of the simulations could be frequently compiled, summarized, and communicated throughout the organization by those running the simulations. The knowledge gained from these exercises would feed into the organization's own learning structure and would be used to drive continuous strategy development and realignment. The virtual learning organization is an example of cutting edge technology applied to organizational learning. Other management techniques attempt to achieve alignment in the same way--by increasing the efficiency and effectiveness of management and leadership processes. These approaches can be effective in specific areas, but cannot address overall organizational alignment.

Large-scale interactive process approaches. Among these methods are the Search Conference (Emery, as cited in Pasmore, 1988), the Future Search (Weisbord & Janoff, 1995), the Conference Model™ (Axelrod, 1992), and Real Time Strategic Change process (Dannemiller & Jacobs, 1992; Jacobs, 1994). Each of these methods, collectively called *Large Scale Interactive Processes* (LSIP), seeks to obtain a large, representative group of stakeholders to participate in a structured process to find common ground and develop both a shared vision of the future and the plans required to move toward that preferred future. The LSIP methods differ in specifics, but all are based upon several core values: (a) inclusion of a diversity of viewpoints, (b) mutual interpersonal respect, (c) collaborative action, (d) a future orientation, and (e) finding common ground.

The application of LSIPs to organizational alignment offers some significant advantages. By involving a large number of participants, organization captures a greater amount of useful information in the strategy development process. The inclusion of external stakeholders (customers, suppliers, community members) strengthens this advantage. The LSIP methods integrate strategy development with implementation, and the high participation levels help to ensure that implementation progresses more rapidly and more effectively. Structural and process changes made as a result of the plan are able to support the new patterns of behavior and reinforce the behaviors required to make progress toward the shared vision.

Schein (1990) and Pasmore (1988) caution that there may often be more than one coherent culture operating within a single organization. The dominant culture may also change as the wider social environment of the society in which the organization is embedded changes (Nadler & Tushman, 1989). The LSIPs are able to bring in both organizational majority cultures and subcultures through their emphasis on maximum and representative participation. This inclusion, coupled with the participation in the strategy development and planning processes, helps to ensure that the strategy reflects the whole organization's values.

The advantages of the LSIP approaches are speed, participation, effectiveness, comprehensiveness, and the relative ease of implementing the results of the activities. One of the disadvantages of the approach is that most organizations are not currently familiar with the LSIP methods. Other disadvantages are that many organizations may not be comfortable giving so much power to the average employee in a high involvement process, and that the preparation time and cost may appear to be a barrier, although this may often be insignificant when compared with the costs of other methods that take much longer to fully implement.

Summary

Organizational alignment is a measure of organizational health and efficiency. It is not the only measure, but it offers a specific view of the organization as a system that operates best when it is in tune with its environment and when its components interact in harmony. The task of improving alignment often falls to the OD practitioner or consultant. The approaches presented here should serve as a basic menu of choices and a place to start.

The importance of future simulations that tie to organizational learning is a concept with potential. The idea of virtual learning organizations could offer the front line employee the chance to "play CEO." If simulation could be made part of the continuous strategy development process, organizations might be able to anticipate and prevent market disasters. In any event, strategic learning organizations would make the task of realignment much simpler.

Large-scale processes have quite a bit to offer client organizations. By increasing participation, these processes increase speed, effectiveness, implementation, and ownership of the results. Only a fairly small number of practitioners are trained in their use at this time, but we may expect to see that number grow dramatically as the benefits of LSIPs become more widely known. An intangible benefit of the large-scale processes reported by Kathie Dannemiller, one of the large-scale process pioneers, is the intense positive energy that participants experience during and after the events. She has remarked that it is amazing and wonderful that people can do so much work on their organizations and be so energized about it. The LSIP methods are also very effective at improving organizational alignment.

As the world becomes more complex, competitors, customers, shareholders, communities, and employees will place more direct and indirect demands upon organizations. Improving organizational alignment can provide a competitive advantage to those organizations that are wise enough to pursue it. Improving the harmony between organizational strategy, structure, and culture can make it increasingly likely that an organization will reach its goals and be able to thrive amid increasing complexity.

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Revisiting our Analytical Models of Organizational Change

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Current models of organizational change are focused on the importance of creating vision, alignment and transformational leadership. These models emphasize the actions and thought processes of top management. Despite the growth of employee involvement strategies, most change models implicitly view human resource issues too late in the change process. Analytical models of organizational change should be altered to reflect the knowledge that employee attitudes, values and behaviors play a pivotal role in organizational change efforts.

Organizational analysts and human resource practitioners have long been interested in identifying how organizational change occurs. There has been a proliferation of literature on organizational change, perhaps because organizations are faced with mounting pressures to change in today's world. We often know why change efforts fail to be sustained more than we can identify why change efforts succeed—even though there is no shortage of attempts to do so. Burke and Goodstein (1990) note that "even though we often state the obvious and spout cliches about change, this does not mean we have an in-depth understanding of what we are talking about" (p. 6). The focus of this paper is to contend that our analytical models of change have not caught up with the knowledge that we have gained about successful change processes.

Statement of the Problem

The central issues to be addressed in this paper are: Do current models of organizational change and transformation adequately account for how organizations actually transform themselves? Specifically, how do they help organizations ensure that organizational change efforts will be successful, or how might these models be adapted to optimize organization transformation efforts?

Current models of organizational change and transformation are focused more on the importance of creating vision, alignment and transformational leadership. They emphasize the action and thought processes of top management. John Kotter's eight stages of leadership as outlined in Leading Change are an example of this (Kotter, 1996, p 21). Kotter's model is to be commended as a useful practical tool. It is illustrative of many common analytical change models. As such, it depicts a model of organizational change which is initiated at the top of an organization and filters down throughout the organization. There have been no shortage of practitioners and theorists proclaiming that failures to sustain change efforts revolve around human resource issues (Duck, 1993; Schneider, Brief and Guzzo, 1996) This may partially result from analytical change models which place employee issues too late in the process. If this is true, our models should be altered to reflect our current knowledge.

Research Methodology

First, a brief review of the current organizational literature regarding organizational change models is presented. This is not intended to be an exhaustive review but is done to provide the context for the problem and to narrow the focus. This will provide the theoretical framework for the paper.

Second, an organizational analysis is presented of a change effort in a mid-western plastics manufacturing company. The research was conducted over an 18 month period of time,

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from June, 1995, to December, 1996. This is part of an ongoing study to determine the organization's response to change. The company's primary lines of business are in the extrusion coating and plastic sheet production business.

The organizational research includes 1) a review of company documents and management statements, 2) employee opinion survey responses, 3) observations of company meetings and training sessions, and 4) transcripts of video-taped interviews with selected managers and employees along with written notes of non-videotaped interviews. Interviews have been conducted at four levels—the corporate office (President and three Vice Presidents), the plant manager, middle managers (5), and operating employees (10). This was done to gain different vantage points regarding the change process. Periodic video-taped interviews will also be conducted in the future to observe management and employee response over time. A qualitative research approach has been adopted along the lines proposed by Coffey and Atkinson (1996). The interview data has been transcribed and analyzed with the aid of both a coding and classification system and a metaphorical analysis.

Theoretical Framework: Current Organizational Change Literature

A myriad of articles and books on organizational change have been forthcoming. It would be a mistake to assume a high degree of commonality between organizational change models. It is not my purpose to present a broad review of the organizational change literature. However, it is important to narrow the scope theoretical framework for this project. A review of recent publications yields four "streams" of organizational change research.

1. ***Change Theory Classification Systems.***
This is likely a sign that the field of organizational change is reaching maturity. One stream of research attempts to classify the various theoretical approaches to organizational change. This stream is exemplified by such works as Van de Ven and Poole (1995).
2. ***Strategic Change Choices.***
A second stream is composed of literature focused on identifying variables affecting the choice of particular change strategies. These may be considered "situational" or contingency oriented approaches to change processes. This stream is represented by the work of Dunphy and Stace (1993), emphasizing the need to consider the style of leadership and the scale of change; Strebel (1994) exemplifies this approach by focusing on the environment and forces of resistance. Nadler and Tushman (1990) also exemplify this stream in their distinction between incremental and strategic or discontinuous change.
3. ***Interpretive/Philosophical Analysis***
A third stream is focused on the importance of language used in our organizational change models. This has centered around the use of metaphors as it relates to change theory. Palmer and Dunford (1996) have written extensively about the how metaphors may be used in conflicting ways. Marshak (1994) has also developed a typology of metaphors used in the field of change theory. These authors exhort organizational analysts to become more aware of the impact of the language and images used.
4. ***Case Application and Analysis***
A fourth stream revolves around two types of publications. The first type includes case analyses as to what change interventions have succeeded and failed. Sometimes a theoretical model is used in conjunction with this; at other times, the case is merely descriptive. This type is reflected in the work of numerous popular business texts. The second type is the development of theoretical models, aimed primarily at guiding practitioners. John Kotter's book previously cited, Leading Change, is such an example. A similar example, more empirically based, might be seen in Robertson, Roberts and Porras (1993).

I am primarily concerned with this last type, partially because these models may have the greatest impact on a large number of individuals and organizations. Although, as noted below, I will draw on the literature of the third stream as well. Each of these streams have a contribution to make to the field and they are not mutually exclusive. In addition, one more field must be considered, that of the "learning organization." This is a field distinct from organizational change, but likely grew out of the field of organizational change. This is exemplified by the writings of Senge (1990), and Nevis, DiBella and Gould (1995). The contribution of this field will be discussed further below.

What are the main features of this fourth stream, case applications? First, perhaps because they are directed toward applications, they tend to be sequential or stage models. As such, they tend to be linear, causally related models. In Kotter's case, he goes as far to say that the stages must be experienced as they are presented (p. 23). Second, they are hierarchical models for the most part—with change process being initiated at the top of the organization and moving down the organization. This may take the form of a "guiding coalition" or a "transition management team." I acknowledge great support in the literature and in real life regarding the importance of leadership and top management support. Third, because of the structure of the model, the bulk of employees are affected at later stages in the model. In most application models, the "people issues" surface at the implementation stage. If we were to perform a metaphorical analysis, we might conclude that the image of employees in the process is as follows: employees are a group to be "aligned" with a vision, an important group to be over-communicated to, and in some cases, they are an implementation hurdle—a critical one at that. This is so even though most of these models espouse high employee involvement processes.

Finally, there is growing evidence in the literature that the role of individuals has been underestimated, and in fact, human resource problems have been the source of many barriers to successful change efforts (Schneider, Brief and Guzzo, 1996). Recently, an article emerged about how the "re-engineering gurus" forgot to include people in their formula (White, 1996). "Organizations as we know them are the people in them; if the people do not change, there is no organizational change" (Schneider, Brief and Guzzo, p. 7). Perhaps our analytical model of change needs to be altered to address larger employee workforce issues earlier in the process. We find this out in hindsight numerous times—maybe the model needs to reflect our hindsight.

Case Background

Additional insights may be obtained by combining this theoretical framework with organizational case research. PLASTIX (a fictionalized name) is a manufacturer and distributor of plastic products. You find their end product being used on such things like restaurant menus and credit card laminations. The company is privately owned, 700 employees at 14 sites across the U.S. and Canada, with a corporate headquarters in a major mid-western city. They employ their own sales force. The company has progressively gotten larger over the past 60 years. Recently, product sales have increased overseas but declined slightly in the domestic market. The company has generally competed on the basis of quality rather than price. It has excelled in customizing products for its customers and has been in the forefront of technical improvements. Recently, competitors have been catching up to their quality levels and excelling at product delivery times. Like a number of industries, PLASTIX is pushed to produce higher quality, quicker, and cheaper. Research on the organization has been conducted at one of its major manufacturing locations (195 employees) and the corporate office. This particular location has more than doubled its size in the last eight years.

In January of 1995, the plant manager recognized a need for improvement in the quality of supervision and management. Like many small to medium sized companies, many of the first line supervisors and managers had been promoted from technical positions, were limited in their education and functioned out of a more directive style of management. The first intervention was to develop a series of supervisory training sessions on leadership philosophy, motivation and interpersonal communication skills. Outside consultation was obtained for this and these sessions were completed in the Summer and Fall of 1995. Not surprisingly, participants expressed skepticism regarding any change in managerial behavior because there was little involvement, other than sponsorship, of these training sessions. During this same time period, the company was going through ISO 9002 certification, which it obtained.

In January of 1996, the plant manager was promoted to the corporate offices and a new site manager recruited and hired from the outside. Three months later, the new plant manager determined that a more aggressive change effort was needed, and again utilized outside consultation. The stated change objectives were to 1) increase employee initiative, 2) reduce interdepartmental conflict, 3) heighten focus on the customer, and 4) increase operational productivity through better inventory management, decreased cycle times and better material utilization rates. In short, the plant manager desired to move the plant toward "world class performance." This time, a combination of approaches was used. An employee opinion survey was administered in August, 1996. A series of management retreats were held in the Fall of 1996; open employee forums were scheduled and several cross-functional work teams were initiated.

With the approval and participation of the company, a series of interviews, the majority of which were video-taped, were conducted. As noted above, these were conducted at the corporate level, plant management levels and employee levels. The first phase of interviews has been completed and will be repeated at several points in the future. A structured questionaire was used to elicit individual's overall opinions and attitudes about how change is introduced, implemented and managed within the organization. Prior to completing the research, it was hypothesized that the intervention of interviewing employees would create self-reflection and learning about company change efforts and would decrease organizational resistance and facilitate employee commitment to change efforts. However, it is too early to determine if this is correct. The initial round of interviews offer no evidence to support this hypothesis. This hypothesis will be developed or left behind as future interviews are conducted.

Research Results

The following results are emerging, based on a qualitative review of the data. First, the architects or the drivers of change (top management) are the furthest removed from the operational effects of change. If top management does not have at least an "implicit" model of change which links both the change vision and the change effects, the transformation process will become bogged down or stalled. A strategy for helping employees adjust to changes in daily operating conditions is required. Second, top management may mistake the lack of objections as "alignment" or "commitment" to the change process. Stated differently, employees appear committed and supportive but this may be due to the fact that they have been appropriately socialized to respond positively—and may have little idea as to what they are actually committing themselves. Third, the largest hurdle to overcome is not employee resistance or unwillingness to change, but the lack of skills or knowledge to do so. Each of these points will be explored in more depth.

1. *Linkage of Vision and Effects*.

First, interview data suggested that there were distinctly different vantage points regarding the change process. Surprisingly, but perhaps accurately, the corporate officers seemed to possess little stated interest in creating change in the organization—even though they acknowledged the need to bring in an outside plant manager to guide the operations into the future. The plant manager clearly expressed the greatest need for transformational change, although he acknowledged that at the beginning of his tenure, the only expectation given him for his first three months was to "become familiar" with the company. The employees, on the other hand, indicated awareness of things changing and at least one described the next year as a "pivotal" year for the company.

Several commonalities emerged at all levels. The emphasis on the customer was enunciated at every level. There was a pervasive feeling that "people" were treated well in the company, a reflection of the "family orientation" of the firm. There was evidence that this was moderating somewhat because of growth, increased number of new hires from outside and an increased number of terminations. The president acknowledged that in prior times, there may have been a little more "slack" to carry poor performers.

The key issue about linking the overall vision with the daily operating actions seems to be between the plant manager and the operating employees. Although employees clearly stated that communication has improved, that greater employee involvement is expected, and that greater interdepartmental cooperation is occurring, there is still evidence that the vision is not being translated into operational terms. This is exemplified by lack of progress in such areas as inventory management. It is further exemplified by employee comments that they would like to know about decisions before they occur. This could be attributed to several different causes—a lack of support by middle management, an inability to translate the conceptual vision into operational details, or simply time needed to adjust to a new plant manager.

2. ***Mistaking No Objections for Vision Commitment.***

This issue also is focused at the plant level. This is a result that was not hypothesized ahead of time, and simply emerged out of the observational experience and may be instructive for future change process experiences. This particular company is fortunate in having a backlog of trust on the part of it's employees. Objectively, turnover rates are low for the company relative to the rest of the industry. Again, interview comments reflect the concern the company has for individuals. A predominant theme was dealing with "individual personalities." The president used the image of a functioning body with all parts needing to be healthy to be productive. Operating employees noted the importance of dealing with each person as an individual in introducing change. The plant manager noted the importance of "reading" people and understanding who each person was—on and off the job. Not surprisingly, then, the workforce seems committed to helping the organization change and progress.

However, this seeming lack of resistance and lack of objections should not be mistaken for commitment. It may seem paradoxical, but there appears to be organizational commitment without commitment to the change process—perhaps because the organization has provided a secure environment to work in (virtually no reductions in force). I will offer another alternative explanation. In strongly developed organizational cultures, employees have been socialized to respond positively to management—and in this case, the lack of objections and overt resistance does not indicate the presence of commitment. When pressed, employees and middle managers have a difficult time articulating what the "specific change agenda is." This result should cause us, as managers, to develop better feedback systems to find out what has actually been communicated to and understood by employees.

3. ***Lack of Skills and Knowledge.***

Building on the second finding in this case, although there is skepticism on the part of some middle managers and employees, there is a willingness to change behaviors if needed. What was not clear was why certain operational changes have not been made, even though individuals have agreed that problems exist? This finding is based in part on what was not said. There was little mention by interview participants of lack of skills or knowledge (either because it is not a problem or because they did not wish to admit this). However, the experience of some of the cross functional teams is instructive. Three teams composed of members from different departments and across hierarchical relationships were formed with mixed results. It quickly became apparent that these team members did not know how to work together. On the other hand, the plant manager recounted how two departments migrated from a "warring" state to a more "cooperative" working relationship. Employees, particularly at the operating level may not be prepared for the challenges of the organization's change processes.

Discussion and Implications

It should be noted that there are many limitations of the research conducted. First, it has been conducted in a smaller organizational setting. Second, it was conducted at an early phase of a change process. Third, the results could be severely impacted by the influence of new management. The situation could be so unique as to not permit suggesting general principles. Nevertheless, these results suggest that 1) the change design process in this particular situation may need to be altered, and 2) that our models of organizational change may need to more adequately account for the preparedness of the people most affected on a day-to-day basis by our organizational change processes. John Kotter's eight stage model will be quite useful to address the first point. But it is the second point which is the focus of our attention. My observations come as a result of my analysis of the findings, my own past professional experience with large scale organization change and an immersion with the change theory literature.

As previously acknowledged, John Kotter's eight stage model is not the only model of change. However, it is quite understandable, of great practical value and is representative of other similar models. A more detailed model, more empirically based, is presented by Robertson, Roberts and Porras (1993). Both models are underpinned by a "systems" approach. Both models emphasize the importance of both values and behavioral aspects. Both models acknowledge the important role of employees, human resource issues, and the importance of organizational culture. But both, perhaps Kotter more than Robertson, Roberts and Porras, place individual behavior (or employees) in a later phase of their models. With respect to Kotter, the mass of employees are involved primarily after the sense of urgency is created, after the guiding coalition is formed and the vision defined. In the case of Robertson, Roberts and Porras, it is interesting to note that "individual behavior" is placed between "organizational work setting dimensions" and "organizational outcomes." In addition, they portray individual employee changes as emanating from changes in the work setting.

After reviewing the literature on metaphors and change theory, I have to ask whether these models have not influenced our view of employees and their role in the change process? Should our models be revised to "catch up" with our words and our current knowledge of successful change efforts? This may seem like a subtle point, but an important one. As Marshak (1994) notes, our metaphors may function to 1) diagnose unarticulated assumptions, 2) prepare and align people, and 3) confuse or mislead people (p. 49). The metaphor or image which emerges, based on these change models, is that employees are most important in the implementation phase. Although our stated goals are often empowerment and employee involvement, our models reinforce the notion that employees are brought into the process 1) when we are ready to communicate our change visions, 2) when we are ready to implement or operationalize our change visions, or 3) when we are ready to "align" them with the vision. These images fly in the face of employee involvement. Further, we know from experience that change efforts come unglued, stalled and are not sustained, in at least some cases (the present one included) because employees are not adequately prepared or involved.

Unfortunately, I am not great at visualization, otherwise I could propose a nice three dimensional model (I am a creative musician, but the manuscript submission guidelines had no guidance for musical pieces submitted). But I will offer a simplistic or primitive suggestion as to the way our change models should be altered. Currently, models such as Kotter's follow a basic movement: change visions are formulated, change plans defined and change plans are communicated. This occurs in a fashion that starts with a company's leadership and radiates outward. You may visualize this as either a horizontal or vertical progression.

A second process needs to be overlaid on this simultaneously—one which moves from the employee level upward or outward through the organization (even if managed by the leadership). We now re-visit that fifth field—the learning organization—a first cousin of change theory. As a practitioner, I have found the concept of the learning organization very interesting, but hard to put into practice. Ronald Jacobs (1995) summarized it nicely when he questioned whether there was anything behind the curtain of the learning organization? At times, the learning organization concept seems to be like an engine running at full speed which is not connected to the drive shaft. Yet we read, and perhaps intuitively know, that successfully changing organizations are composed of individuals who can adapt and learn from their experiences. From personal experience, I also see that those organizations which are trying to operationalize this learning organization concept are focused on individual employees more than top management. Nevis, DiBella and Gould (1995) propose a three stage model of "knowledge acquisition, knowledge dissemination and knowledge utilization." The model of the learning organization may be useful in complementing our models of organizational change because it may provide us with a framework for considering employee issues early in our change models—not just at implementation time. Visualize the three stage model alongside the change model.

Figure 1. Change/Learning Model

VISION FORMULATION → CHANGE PLAN DEFINED → PLAN COMMUNICATED

KNOWLEDGE APPLIED←KNOWLEDGE DISSEMINATED←KNOWLEDGE GENERATED

This crude figure may depict two linear models, but seeing them working simultaneously and using them when change processes are at their beginning stages may help us anticipate later problems.

For example, if I apply it to the case analysis presented here, we might ask at the outset of developing a change plan: what can we anticipate that our employees need to know, or how can we prepare them for changes we have not yet defined? This seems paradoxical but may be the actual state in which we find ourselves. In this case, we might identify several knowledge areas such as 1) an understanding of personal responses to change, 2) the development of skills to work in teams or groups, or 3) greater appreciation for interdependence and system concepts. If used with a little creativity, approaching change processes from both the leadership and wider employee perspectives may yield more successful change efforts.

This may lead to further research questions. What is the practical value of this model? Are there organizations who have engaged in these activities simultaneously and what have their results been? What additional alterations to the model can be made to make it more useful. How can the concept be expanded in greater detail or depicted in a more useful fashion? What ways could we assist organizations to identify learning needs prospectively? Does the concept of the learning organization need to be amplified before such a model is useful?

Summary

Organizations are changing more rapidly than ever before. Successful transformation depends both on skilled leadership and committed and knowledgeable employees. Current models of organizational change emphasize the contribution of top management and consider the wider employee constituencies too late in the process. By examining both theoretical literature and an organizational case study, the rudiments of a new model of organizational learning/change was proposed—one which would combine learning organization theory with change theory. This proposed model would provide a way for organizational leaders to focus on anticipating employee knowledge needs and on preparing employees for their roles in organizational change processes.

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The Effects of Blame Attributions and Justice Violations on Revenge and Forgiveness in the Workplace

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This study draws attention to revenge as a behavioral response to perceived injustice and forgiveness as a viable alternative. We tested a mediated model, postulating that thoughts of revenge mediated the independent variables of blame attributions and justice violations on the criterion variables of revenge and forgiveness behavior. Support was found for direct and mediated effects.

In the aftermath of personal injury, individuals may use various means to restore justice for the wrongs that they incur. Not all forms of justice, however, address wrongdoings that have resulted in emotional, psychological, or physical injury (Peachey, 1989). When people have been injured, and relationships have been broken, a different kind of justice is often needed to "make things right." The nomenclature for the justice that seeks to redress injury inflicted by one party on another is *restorative justice* (Peachey, 1989). Restorative justice does not address conflicts of interest, but is invoked when one party is injured or offended by another party. Thus, restorative justice becomes salient after a personal offense has been committed.

Two important components of restorative justice, of interest in this study, are revenge and forgiveness. Both revenge and forgiveness have been cited as means by which individuals may restore justice after being offended.

Construct Definitions

Revenge Revenge is a fundamental motivating force in human behavior (Marongui & Newman, 1987). It has been defined as "the infliction of harm in return for perceived wrong" (Stuckless & Goranson, 1992) and has been cited as a primary cause of aggressive behavior (Brown, 1986). Revenge is almost always accompanied by intense anger (Buss, 1961) and it typically follows a period of reflection on the harm done to the victim (Bar-Elli & Heyd, 1986).

Evidence of revenge in an organizational context is provided in a study by Terris and Jones (1982), who showed that revenge is one of the major reasons for employee theft. Similarly, Crino (1994) posited that revenge frequently motivates acts of industrial sabotage. Whereas these studies illustrate revenge in organizations as a means of retaliation similar to indirect aggression (Buss, 1961), revenge may be more often carried out at the interpersonal level of human relations.

A study by Mikula, Petri, and Tanzer (1990) found that the greatest number of workplace offenses revolve around norm violations at the interpersonal level. These violations appear to produce the most intense feelings of anger and resentment, which subsequently motivate a desire for revenge (Bies & Moag, 1986). There appears to be little research, however, showing how the process of revenge works between individuals in an organizational context.

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Some writers have argued that revenge can be constructive in certain situations (Bies & Tripp, 1995), but it is generally criticized as being harmful to the victim and the offender, and to their relationship as well (Cloke, 1993). Its uncomplimentary reputation exists because revenge is frequently accompanied by suppressed anger, alleged to be psychologically and emotionally unhealthy (Fitzgibbons, 1986). Revenge has also been criticized because it seldom produces the desired outcome (Power, 1994) and is humiliating and degrading to the offender, even if it satisfies the victim (Hampton, 1988a). Furthermore, revenge has been discouraged because it tends to escalate conflict, creating a reciprocal chain of revenge and counter-revenge that may last for weeks, months, or generations (Kim & Smith, 1993).

Revenge can be distinguished from other types of negative reciprocity, such as hostility and retribution (Stuckless & Goranson, 1992) because of its greater emotional and behavioral intensity (Axelrod, 1984). Moreover, acts of revenge are often intended to inflict pain on the offender with the goal of elevating the victim to a superior position (Hampton, 1988a). Other forms of negative reciprocity may also inflict pain, but the punitive actions taken against the offender are not always perceived as a competitive victory demonstrating the superiority of the victim. In retribution, for example, the primary emphasis is on the denial of the offender's implicit claim of relative superiority and the assertion of the victim's value by the punishment of the offender (Hampton, 1988a). Retributive punishment seems to be limited and enacted most often by an official third party. Thus, revenge is a unique form of negative reciprocity, characterized by an intense personal action intended to restore the rank of the victim and demean the offender in the process.

Forgiveness The concept of forgiveness has been almost totally ignored in the literature, perhaps because of its traditional connection with religion (McCullough & Worthington, 1995; Pingleton, 1989). Forgiveness is a complex of affective, cognitive, and behavioral phenomena in which negative affect and judgment toward the offender are reduced, not by denying one's right to such affect and judgment, but by viewing the offender with compassion, benevolence, and love (Enright, Gassin, & Wu, 1992). It essentially involves the forswearing of resentment and anger on moral grounds (Murphy, 1988).

After experiencing an offense, the forgiver chooses to let go of negative affect, although this may be a lengthy process preceded by exercises in intellectual forgiveness (Fitzgibbons, 1986). Furthermore, the forgiver may also begin to see the offender in a new light and make some effort at conciliation (Wade, 1989). The restoration of justice occurs as the victim experiences freedom from the offender's judgment and reaffirms his or her relative value that was called into question by the offense (Hampton, 1988b).

The desire to forgive may be as strong an impulse as the desire for vengeance or retribution. A study by Brown and Peachey (1984), for example, found that *conditional* forgiveness was a strong preference of crime victims. Based on interviews with 140 victims, the researchers found that 41 percent of the subjects reported that rehabilitating the offender would be the "fairest thing to happen" in situations in which the subjects had been the victims of a crime. In contrast, only 29 percent wanted retribution. Similarly, Cohn and Rabinowitz (1980) found that victims did not favor imprisonment of offenders over rehabilitating them.

The notion of "conditional forgiveness" suggests that people are looking for fairness in holding offenders accountable for their actions (Umbreit, 1989). Umbreit conducted 50 face-to-face interviews with burglary victims. Ninety-eight percent of the victims indicated that rehabilitation was an important part of their understanding of fairness. The least frequent concern of these victims, according to Umbreit, was punishment, defined as the incarceration of the offenders. These studies provide some evidence that conditional forgiveness, rather than retribution or revenge, is seen by many people to be a fair and acceptable response to a personal offense.

It is apparent that people use both revenge and forgiveness to restore justice in situations where they have been unjustly treated. Furthermore, there is evidence that both are fundamental to humankind. However, it may be that the ways in which personal injuries develop will determine whether people will respond vengefully or forgivingly.

The Nature and Development of an Offense

Disputants' perceptions of justice have been described in terms of three primary types. Distributive justice refers to whether a particular outcome or decisions is deemed fair (Deutsch, 1986). Procedural justice refers to the perceived fairness of the procedures used to allocate outcomes or make decisions (Lind & Tyler, 1988). Finally, interactional justice refers to perceptions of fairness based on an evaluation of the quality of interpersonal treatment a person receives from a decision maker or authority (Bies & Moag, 1986).

Whereas any one of the three types of justice violations may inflict injury, people seem particularly prone to taking offense if the offenders violate the norms of interpersonal relations (Mikula, Petri, & Tanzer 1989). Examples of these kinds of violations, according to Mikula, Petri, and Tanzer, are lack of loyalty, lack of empathy, selfishness, and acting in a hostile manner. Similar types of injustices were reported in a study by Messick, Bloom, Boldizar, and Samuelson (1985). In their study, subjects listed gossip, rudeness, and lack of punctuality as offensive things that others did. The offenses described in both studies seem to violate perceived norms and perpetrate injustice at the interpersonal level. An offended party's response to actions such as these may largely depend on how the offense develops.

In many ways, the development of a personal offense parallels the formation of a grievance (Ferguson & Rule, 1981). According to Ferguson and Rule, the victim first makes causal attributions about the offender's actions. These attributions are made by the offended party to analyze the cause of unwanted negative events (Wong & Weiner, 1981). Examples of causal attributions are the extent to which the victim blames the offender, the extent to which the victim believes that the offense was intentionally perpetrated, and whether or not the victim believes that the offender had just cause. Based on the victim's attributions and the offender's response, the victim may subsequently choose to forgive or, alternatively, seek to exact revenge (Felson & Tedeschi, 1993). According to Felson and Tedeschi, the victim may demand an account, ask for an apology, or seek compensation, before deciding whether to seek revenge or to forgive. In this sequence of events, however, the victim cannot entertain thoughts of revenge or forgiveness unless he or she has first been the personal victim of an offender's wrongdoing and has attributed blame to the offending party (Murphy, 1988). The extent of blame is the result of the attribution process. Thus, we postulate that cognitive attributions of blame precede the development of revenge and forgiveness thoughts.

Research Questions

The purpose of our study was to examine the process that leads to expressions of revenge or forgiveness in response to personal offense. Our principal research questions were:

(1) What types of justice violations are likely to lead people to seek revenge or forgiveness?

(2) What is the relationship between individuals' thoughts of revenge and forgiveness and actual behavior on the same?

(3) What is the relationship between attributions of blame and revenge and forgiveness thoughts?

Methods

Sample The sample consisted of employees of a public agency, Master's students enrolled in a graduate business program, and undergraduate psychology students. The total sample size was 153.

Procedure A self-administered questionnaire was used to collect data on all study variables. Respondents were asked to describe an incident at work in which they were offended by another person. They then reported their cognitive and behavioral responses to the offense by responding to items from several scales drawn from a forgiveness instrument developed by Wade (1989). The scales included measures of attributions of blame, revenge thoughts, and revenge and forgiveness behavior.

Analyses Incidents described by respondents were content analyzed to classify them, a priori, into one of the three types of justice: distributive, procedural, or interactional justice. Exploratory factor analyses were performed on the subscales to assess the dimensionality of the revenge and forgiveness measures. Hierarchical regression analysis (Baron & Kenney, 1986) was used to test a mediated model in which attributions of blame and type of injustice was predicted to influence revenge thoughts which, in turn, influenced revenge and forgiveness behavior.

Results

Results show that there was a significant relationship between thoughts and behavior on the revenge and forgiveness variables. Also, we found a small but significant mediated effect for one of the justice variables.

Direct Effects The relationships among revenge thoughts and revenge and forgiveness behavior were examined using correlational analysis. As expected, revenge thoughts were positively related to revenge behavior ($r=.56$, $p<.001$) and negatively related to forgiveness behavior ($r= -.26$, $p<.01$).

Mediated Effects Following the procedures outlined by Baron and Kenney (1986), eight tests of mediation were performed on the criterion variables, revenge and forgiveness behavior. For each behavior, the three types of injustice (i.e., distributive, interactional, and procedural), as well as attributions of blame, were entered in the step 1 of a hierarchical regression. Thoughts of revenge were added in the second step to determine if it mediated any previously significant relationships.

Results showed that the direct effect of distributive justice explained a significant proportion of the variance in revenge behavior ($R^2=.03$, $p<.05$), and the change in R^2 when revenge thoughts were added was significant ($\Delta R^2=.29$, $p<.001$). Results from step 1 showed that violations of distributive justice were negatively related to revenge behavior ($\beta= -.17$, $p<.05$). When revenge thoughts were added, the relationship was no longer significant ($\beta= -.08$, n.s.). Together, these results provided evidence of full mediation (Baron & Kenney, 1986).

The hierarchical regression also revealed that revenge thoughts mediated the relationship between attributions of blame and revenge and forgiveness behavior. Results showed that attributions of blame explained a significant amount of variance in revenge ($R^2=.06$, ,$p<.01$) and forgiveness ($R^2=.03$, $p<.05$) behavior. The change in R^2 when revenge thoughts were added was significant for both revenge ($\Delta R^2=.26$, $p<.001$) and forgiveness ($\Delta R^2=.04$, $p<.05$). In step 1, attributions of blame were positively related to revenge behavior ($\beta=.24$, $p<.01$) and negatively related to forgiveness behavior ($\beta= -.18$, $p<.05$). When revenge thoughts were added to the equation in step 2, both relationships were no longer significant, providing evidence of full mediation (Baron & Kenney, 1986). We found no evidence that revenge thoughts mediated the relationships between interactional and procedural justice violations and revenge and forgiveness behavior.

Discussion

The data in our study show that the extent to which an individual blames his or her offender contributes to the subsequent thoughts of the offended party's revenge and, ultimately, whether that same offended party chooses to engage in revenge or forgiveness behavior. Although the cognitive appraisal of blame may occur very quickly in some instances, the process of attributing blame seems to be a precursor of thoughts associated with the desire for revenge. These findings are consistent with attribution theory (Heider, 1958; Jones & Davis, 1965), which espouses that people initially perform a cognitive evaluation to determine whether the actor or some other external factor caused the unwanted action of the other person. Based on the victim's attributions and the offender's response, the victim may subsequently choose to forgive or, alternatively, seek to exact revenge (Felson & Tedeschi, 1993). In this sequence of events, however, the victim cannot entertain thoughts of revenge or forgiveness unless he or she has first been the personal victim of an offender's wrongdoing and has attributed blame to the offending party (Murphy, 1988).

Furthermore, our findings support those of Mikula, Petri, and Tanzer (1990), who found more offenses associated with violations of interactional justice than distributive justice. Our results showed a significant negative relationship between distributive justice offenses and revenge thoughts, suggesting that distributive justice offenses were less likely to lead to revenge thoughts than procedural or interactional justice types of offenses. One explanation for this finding may be that distributive justice offenses are impersonal by definition, whereas offenses of a procedural or interactional type are more likely to be the result of a negatively perceived interpersonal action.

The results of this study also provide support for the theory of cognitive consistency. Applying this theory to the present study, we suggest that offended individuals' cognitions regarding the appropriateness of their behavioral responses will influence their choice of behaviors. As psychological theorists (e.g., Festinger, 1957; Newcomb, 1968) have recognized, people desire to maintain consistency between their thoughts and actions. Consequently the more people think about revenge or forgiveness, the more likely they are to act upon these thoughts.

Implications

This study has implications for HRD interventions in the field of conflict management and mediation. Many trainers and mediators have focused on various activities that do not account for the issues that surround an injured party's concerns for restoring justice. A more complete understanding of the development of workplace offenses will help practitioners appropriately address conflicts and grievances in which one or more parties have been offended.

Furthermore, this study calls attention to the notion that interventions cannot focus exclusively on the "how-to" of managing conflict, such as ways to manage the issues at stake. In cases where a personal injury has been sustained, different kinds of cognitive mechanisms and behavioral options become salient to the offended party. These mechanisms and options necessitate appropriate kinds of training and development approaches. Trainers and mediators who understand how to analyze the attribution process and response options of offended parties will be more fully equipped to address this type of conflict.

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The Values of HRD Practitioners

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This research looked at the personal values of HRD practitioners who were members of either ASTD, NSPI or ODN. The Values Scale (Nevill and Super, 1989) or The Study of Values (Allport, Vernon and Lindzey, 1976) were used to measure the values for each subject. Analysis of the data showed that for The Study of Values only gender groups were found to have significantly different values. The Values Scale revealed statistically significant differences between the values for gender groups and between the members of ASTD, NSPI and ODN.

Human Resource Development, as a specialized field of academic inquiry grew out of the practical function of training employees to be more effective. There is a rich history for this applied science that focuses on techniques and outcomes. This emphasis on "what works" however, means that the theoretical and philosophical aspects of the field have not been explored with the same depth as the practical aspects of the field. This situation is being rectified through organizations such as the Academy of HRD and conferences such as this.

When this research was started there was virtually nothing in the literature that spoke about the values of the field of HRD or of its practitioners. As the research plan evolved it became more and more clear that this was ground breaking research. It is hoped that as these findings are published it will create an awareness that there needs to be a dialogue about the values of the field that will lead to a philosophy of HRD.

During the formative stage of the research design a number of peers suggested that the area of values was too soft for rigorous research and that any findings would be swamped by vagueness or would founder on the rocks of rigor. With the strong support of the committee chair and a strong personal interest in values the project moved ahead.

Problem Statement

The literature reveals little discussion of the values of either the HRD practitioners or of the values of the field of HRD as a whole. Identifying the values of HRD practitioners is an important task because values are a significant influence on decisions and actions. When the values are known, the process of understanding their link to the practice of HRD can begin.

Identifying values also provides one of the fundamental elements necessary for the development of a philosophy of HRD. Until the values of HRD practitioners are identified, no meaningful progress can be made on developing a philosophy of HRD.

This lack of knowledge about the values of HRD denies practitioners, managers, researchers and academics a foundation on which to build the future of the field.

Research Questions

The following are the research questions addressed by the present study.

1. What values do HRD practitioners report as important?
2. How do the scores differ for each value measured, based on the three professional membership groups?

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3. How do the scores differ for each value measured, based on the subject's age? gender? race? years of experience? level of education?

Background

Values Defined

The concept of values is one that is often not clearly defined when used in the literature. Values are also frequently not distinguished from (they are, in fact, often used interchangeably with) the concepts of ethics, attitudes, morals and beliefs. Much of the confusion about the concept of values can be traced to a lack of clarity and rigor on the part of the researchers and writers.

It is useful to carefully define the term value and to distinguish it from the other concepts. This research used the definition of values by Milton Rokeach (1972), "values are a type of belief, centrally located within one's total belief system, about how one ought or ought not to behave, or about some end-state of existence worth or not worth attaining" (p.124).

Values are not always known consciously to the individual or group holding them. When the values are not known they are called tacit values. Even though the person or organization is not aware of the values they still influence behaviors. Values that can be articulated are called espoused values. Behaviors are not always consistent with the espoused values of the individual. When values are extrapolated from observed behavior they are referred to as values-in-use.

Values and Actions

The relationship of values to actions is at the very heart of the importance of this research. Rokeach (1972) establishes the value-action link when he wrote, "once a value is internalized it becomes, consciously or unconsciously, a standard or criterion for guiding action, for developing and maintaining attitudes toward relevant objects and situations, for justifying one's own and others' actions and attitudes, for morally judging self and others and for comparing self with others" (p. 160). Rescher (1969) also supports this notion, "values, of course, manifest themselves concretely in the ways in which people talk and act and especially in the pattern of their expenditure of time and effort and in their choices..." (p.5).

Values therefore influence the thought processes of HRD practitioners and impacts the choice of approach and technique. Yet, as long as the values are tacit the practitioner is not aware of the source of his or her actions and decisions. Only through explicating his or her values can a person fully examine his or her motives. This process provides the practitioner an opportunity to explore whether or not his or her actions are congruent with their deepest values.

The Organizations

The subjects for this research were selected from the American Society for Training and Development (ASTD), The National Society for Performance and Instruction (NSPI) and The Organizational Development Network (ODN). ASTD with 24,413 members is the oldest of the organizations being formed in 1943. Its stated mission is to, "...provide leadership to individuals, organizations and society to achieve work-related competencies, performance and fulfillment."

NSPI, with 5,000 members was formed in 1962 as the National Society for Programmed Instruction and later changed its name. The mission of NSPI is to, "improve the performance of individuals and organizations through the application of human performance technology."

Founded in 1964 ODN, with 2,468 is the smallest of the three professional organizations. The mission of ODN is to, "aid the growth and development of OD practitioners. Contribute to the empowerment of the field. Link practitioners and their work with the needs of the world."

These organizations were selected for this study in order to have subjects from the largest HRD organization and two smaller organizations that focus on specific aspects of HRD practice. This sample frame also reflected different roles among the practitioners of HRD.

Methodology

Subjects

A stratified random sample was selected from the membership rosters of the three professional organizations. This means that 382 subjects were selected from ASTD, 77 subjects were selected from NSPI and 50 subjects were selected from ODN for a total of 509 subjects. The subjects were randomly assigned to two groups with each group getting a different instrument to measure values.

Instruments

Two instruments were selected to measure the values. *The Study of Values*, measures six values, has been around for decades and is well researched and validated. *The Values Scale* is a newer instrument that was developed for use in research on vocational choice. *The Values Scale* measures 21 values and has acceptable reliability and validity.

Data Analysis

The scores for each of the values were used for the analysis. The first research question did not have a null hypothesis therefore descriptive statistics were used to give the rankings of the values for all participants. The remaining research questions were analyzed using two-sample or three-sample one way factorial MANOVA, Hotelling's T2, Univariate F Test and Multivariate F Tests.

Results

Completed forms from 236 (46.4% overall response rate) subjects were returned. Of these 173 (45.3% response rate for ASTD) were from ASTD, 36 (46.8% response rate for NSPI) were from NSPI and 27 (54.0% response rate for ODN) from ODN. The ranking of the values for all respondents using the mean of the value score yielded the rankings of the values.

The rankings of the values for all respondents are found in Table 1. The rankings of the values by the three professional organizations are found in Table 2. For *The Study of Values* only the values for men and women were found to be significantly different. For *The Values Scale* the values for men and women and the values by professional organization were found to be significantly different.

Conclusions

A composite of the subjects who responded to the study revealed a group that was predominately white (95%), equally distributed between the genders (53% female / 47% male), was middle aged (mean= 43), experienced (mean=11 years) and very well educated (64% held post-graduate degrees).

The Values of HRD Practitioners

The rankings of the values for *The Study of Values* describes a group of practitioners who appreciate ideas and people. These values support an appreciation of individualism and suggests that the practitioners focus on the useful or practical. The group is less interested in understanding the spiritual world perhaps because the spiritual world is not as practical as other pursuits. This practical orientation may also cause them not to be interested in knowledge for knowledge's sake. Knowledge for these subjects must be applied to be worthwhile.

The values ranked low show that this group does not desire to wield power or to control people. This group's regard for people as ends in not compatible with a desire to use power over people. The ranking of the theoretical values fifty of six reflects the low priority given to order and systematize data that does not seem compatible with a research orientation.

The cluster of values for *The Values Scale* suggests that HRD practitioners place a high value on mental rather than physical activity. They are self-sufficient, independent people who look inward for validation and direction as expressed by high ranking of achievement and autonomy. This notion is supported by the low rankings for economic rewards and advancement that suggest that they are not dependent on external sources for rewards and that it is not the money, but the work that is important to HRD practitioners. They constantly seek that which is new and different.

The emphasis on personal development and ability utilization causes them to seek environments that allow them to seek new knowledge and experience. This need for change could keep them from working to their full potential in a rule-bound or authoritarian corporate culture.

Value Differences in the Professional Organizations

The Study of Values instrument showed a significance of .081 and while it did not meet the .05 level of probability to say that there are definitely differences between the organization members on the values, it can be said that there may be differences between the groups. *The Values Scale* showed a statistically significant difference between the organization membership groups.

The theoretical value in *The Study of Values* is held differently by the three groups suggesting that NSPI members may be more interested in seeking to order knowledge and in systematizing data than are ASTD and ODN members. The differences in the ranking of the social value suggest that ODN members have a more philanthropic or altruistic love of people. They are also more likely to treat people as ends rather than as a means to an end. ASTD holds the economic value higher than NSPI or ODN suggesting that they are more focused on what is practical and useful and consider unapplied knowledge as a waste.

The most striking value differences in the study were between NSPI and ODN on *The Values Scale*. The economic security value was first for NSPI and 21st for ODN. There was also a difference for the value Risk that was rated 19th by NSPI and fifth by ODN. This dramatic difference suggests that members of ODN may choose to act more independently in organizations because they are less limited by concerns about economic security and they are more willing to take risks.

Value Differences for Men and Women

The value ranking for *The Study of Values* suggest that females are more concerned than males with form and harmony, they have a higher regard for people and they seek unity in trying to comprehend the universe. Males are more concerned than females with that which is useful and practical. They believe that unapplied knowledge is a waste, they seek to observe and reason with the chief aim of ordering and systematizing knowledge and they seek personal power, influence and renown. These dissimilar orientations can easily impact on the ability of males and females to fully understand one another and to work together effectively.

The value rankings for *The Values Scale* suggest that females are more concerned with making their own decisions and with independence of action. Males on the other hand are more concerned than women with economic rewards such as salary and bonuses and with the stability of income. Females rank social interactions higher than males.

Implications for HRD

The significant differences found for the organizational groups suggests that these groups may serve members with different values. To the degree that membership on one of these organizations, and not in the others, reflects a functional difference in the position the member holds, there may be differences in the values held by those in different areas of the practice of HRD. Further research is needed to explore these possible differences and to assess their meaning.

The gender differences are important because women are entering the field of HRD in ever increasing numbers. As this study shows, women have different values than men, which means that the values of the field are shifting from a male dominated value set to a more balanced set of values. Not only must the field of HRD cope with these value changes, but male and female practitioners need to accommodate their value differences as they work together. Perhaps the acknowledgment that there are value differences is the first step that can lead to a dialogue about ways to accommodate those value differences.

Recommendations

1. It is clear from this research that the explication of the values associated with HRD issues adds a dimension that leads to a deeper understanding of the field. It is recommended that researchers add an exploration of values to future research designs being sure to carefully define and rank the values.

2. The differences found between the values of the professional organizations are interesting and need to be explored more deeply. Another question to explore is, "Do the broad differences found in the organizations extend to the individual roles found in HRD?" Research looking at the values of practitioners in the various HRD roles would be interesting and would deepen the field's understanding of its values and its purpose.

3. The potential male bias and dated references in *The Study of Values* instrument may be significant impediments to its effective use. Researchers and counselors should carefully assess the usefulness of this instrument and balance that against its flaws.

4. The low number of responses from people of color in the present study raises the possibility that the field of HRD may not be attracting practitioners from diverse cultures. Research is needed to determine the number of non-white practitioners in the field of HRD and to explore the factors that may be keeping people of color from entering the field. If the possible under representation found in the present study is substantiated, further research should be conducted to explore the barriers to their entry into HRD and means to attract more people of color to the field.

5. Research looking at the sources of the values found in this study would expand the finding and add to the understanding of the field of HRD.

6. The present study looks only at the values of the individual practitioner. The organizations in which the HRD practitioners work also have values that may be different than those of the practitioner. Research exploring the interaction of the values of the HRD practitioner and the values of the organization would be useful.

7. A study of the values of HRD practitioners that focused on the theoretical orientation of the practitioner would deepen and extend the findings of the present study. For example, are the values of those practitioners who prefer behaviorist methods similar to the values of those practitioners who prefer humanistic methods?

Final Statement

This research does not create a set of values for the field of HRD; rather it makes the HRD value set explicit. The values have always been present in the field and those, mostly tacit, values have been driving the decisions and actions of the practitioners--unconsciously. The importance of this research to HRD is that it begins the process of making the consideration of values a conscious discussion.

This exploration takes the examination of the field to a deeper level by explicating the values that influence the activities of the field that are the usual focus of research and theory building. Practitioners, researchers, academics and managers must examine this value set and understand it so that they can be more aware of what motivates the practitioner.

At the level of the individual, the practitioner must examine their specific value set as well as their experiences and judgments about the field of HRD to arrive at a deeper understanding of themselves and their work. At the level of the field of HRD, a dialogue is needed to bring together these individual value sets, experiences and judgments and mold them into a philosophy of HRD that gives guidance and direction to the practitioner, the manager, the academic and the researcher.

The present study has explicated a specific value set for the field as a whole, for the organizational groups and for men and women. A dialogue is needed to examine these values beyond the implications discussed in the present study. How do these values fit with the common understanding of the field? Which values support the goals of the field and which values hinder the development of the field? Considering these values, what actions are needed? This research presents "an" answer to these questions; however "the" answer will be found when the field as a whole engages in these questions.

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Table One. Rankings of Values for all Respondents.

The Study of Values

Rank	**Value Name**
1	Aesthetic
2	Economic
3	Social
4	Theoretical
5	Political

The Values Scale

Rank	**Value Name**
1	Creativity
2	Variety
3	Personal Development
4	Achievement
5	Autonomy
6	Ability Utilization
7	Altruism
8	Life Style
9	Prestige
10	Social Interaction
11	Cultural Identity
12	Economic Security
13	Authority
14	Social Relations
15	Working Conditions
16	Risk
17	Aesthetics
18	Economic Rewards
19	Physical Activity
20	Physical Prowess
21	Advancement

Table 2. Rankings of Values by the Three Professional Organizations

The Study of Values

	ASTD	NSPI	ODN
1	Aesthetic	Aesthetic	Social
2	Economic	Theoretical	Aesthetic
3	Religious	Social	Religious
4	Social	Economic	Theoretical
5	Theoretical	Political	Economic
6	Political	Religious	Political

The Values Scale

	ASTD	NSPI	ODN
1	Creativity	Economic Security	Creativity
2	Variety	Creativity	Variety
3	Achievement	Personal Development	Autonomy
4	Personal Development	Achievement	Lifestyle
5	Altruism	Ability Utilization	Risk
6	Ability Utilization	Autonomy	Ability Utilization
7	Autonomy	Life Style	Personal Development
8	Prestige	Working Conditions	Altruism
9	Life Style	Aesthetics	Aesthetics
10	Cultural Interaction	Economic Rewards	Social Interaction
11	Social Interactions	Variety	Physical Activity
12	Authority	Prestige	Achievement
13	Social Relations	Altruism	Authority
14	Working Conditions	Physical Activity	Physical Prowess
15	Economic Security	Social Relations	Social Relations
16	Risk	Cultural Identity	Prestige
17	Aesthetics	Authority	Economic Rewards
18	Economic Rewards	Social Interaction	Cultural Identity
19	Physical Activity	Risk	Working Conditions
20	Advancement	Physical Prowess	Advancement
21	Physical Prowess	Advancement	Economic Security

Secondary Vocational Business Students' Ethical Decision Making

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This study examined 136 high school students' ethical decisions of 25 hypothetical scenarios. These scenarios can be classified into four major areas: opportunity within the organization, pressure from the organization, opportunity from other sources, and pressure from other sources. The results may offer some insights regarding high school students' ethical behaviors.

Recently, teachers, researchers, and managers in the field of human resource development are increasingly concerned about the importance of teaching business ethics in academic settings and in business organizations. Organizations with strong policies regarding business ethics will instill ethical values in managers and employees. With proper training in business ethics, employees will be able to perform ethical behaviors in an organization which will not only benefit the employees, customers, and the society as a whole but also the company's bottom line.

The results of a 1983 Gallup poll showed that only 20 percent of the public expressed "a great deal of confidence" in big business. In a different survey, about 40 percent of executives reported that they were asked to behave unethically. Thus, business ethics is a major concern due to lack of ethical behavior by some individuals and organizations in our society. For the past several decades, business executives are increasingly concerned about business ethics. As a result, codes of ethics are now commonplace among America's large corporations. Business ethics courses have become an integral part of business schools' curriculums.

George Steiner (1972) defined business ethics as a behavior that is fair and just, over and above obedience to laws and regulations. Business ethics relates to law and to moral codes of conduct. Corporations have moral responsibilities which may be internal (e.g., related to stockholders, customers, employees, creditors, and officers) and external (e.g., communities, competitors, government, and society). This definition reflects the point that corporations have to satisfy the needs of all parties involved in the society (e.g., people, organizations). Unethical behavior in a business setting often refers to behavior that is not necessarily illegal, but may be considered inappropriate by many people. No one group ought to benefit while the others suffer. Thus, business ethics must consist of a balance of interests.

Ferrell and Fraedrich (1990) have argued that there are four types of pressures that may impact ethical decisions in business: (1) personal values, (2) organization, (3) competition, and (4) opportunity. Individual values are learned from socialization through family, religion, school, and business experiences. Many researchers assume that these values will remain constant in work and non-work settings. Carr (1968) has suggested that people in our society may have two ethical dimensions: One deals with ethical value system for home and the other for business. Personal values make up only one part of an organization's total value structure.

Moreover, organizational value structure or corporate culture also has a strong impact on individuals' ethical behavior. Ethics reflects both the character of the individual and also the character of the business firm (organizational culture), which is a collection of individuals. Competition creates pressure on individuals to perform and is also a key factor in influencing the ethical environment of the corporation. In the 1990s, organizations in the United States try to improve profits, efficiency, and competitiveness in world markets which may create more organizational pressure for many managers.

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In the area of compensation, most researchers typically examine how well incentives and reward systems increase employees' productivity. Very little research examines the links between incentives and ethical behavior.

Opportunity to engage in unethical behavior provides another pressure. In one survey, 56 percent of the managers indicated that there were many opportunities for managers in their industry to engage in unethical behaviors. Opportunity to engage in unethical behavior has been found to be a better predictor of such behavior than personal beliefs (Ferrell & Gresham, 1985). Rewards and the absence of punishment within the business environment also help create opportunities. Recently, Kumar (1995) employed cluster analysis to examine 231 undergraduate and graduate business students' six dominant values (theoretical, economic, aesthetic, social, political, and religious) measured by the Study of Values. Through cluster analysis which is a common technique for grouping people based on certain shared characteristics, Kumar identified three groups: (1) institutional citizens, (2) rational utilitarians, and (3) wheeler-dealers. Kumar found that 42 percent of the students belong to the institutional citizens group which has the highest score on aesthetic, social, and religious attitudes and the lowest score on economic values. These students tend to show their strong civic orientation, their concern for experiences that go beyond the normal routines of life, and low importance placed on utilitarian, cost-benefit approach to decision making.

Further, 34 percent of the students are rational utilitarians due to their high score on the theoretical values and medium score on the economic, social, and religious components. These students appear to be intellectual, rational, and critical, yet practical and socially sensitive in their decision making process. Wheeler-dealers endorse strong economic and political values and weak theoretical, social, aesthetic, and religious orientations. They tend to view issues from a utilitarian perspective and evoke the image of a "shrewd operator". Only 24 percent of the students, the smallest group of the three, are classified as wheeler-dealers.

The Present Study

This study examined secondary vocational business students' ethical decision making in 25 hypothetical business scenarios. This study may offer some insights regarding ethical orientations of future American business people. The rationale for studying high school students is that they are the source of future business students in our colleges and the source of future business executives in the society.

In the 1950s, 43 percent of high school graduates pursued college and 6 percent of the population in our society were college graduates. In 1992, 66 percent of high school graduates entered college and 21 percent of a much larger population were college graduates. Recently, about 17 million students are going to classes taught by 762,000 professors on 3,400 campuses. According to Herbert London of New York University, the college experience has gone from a rite of passage to a right of passage.

In 1992-1993, 89,390 bachelor's degrees in business administration and management were awarded making it the most popular undergraduate major in college. Many business graduates are being released into the world of work with technical skills but not enough critical thinking skills in ethical issues. The American workplace is in a state of moral chaos. Most workers will face tremendous ethical dilemmas and do not have sufficient framework and help to make ethical decisions (Goree, 1992). Some graduates will become future American business executives.

The results of a back-to-school survey of students in 1992 by *USA Weekend* indicated that some decisions made by students concerning ethics were less than desirable. Surprisingly though, 65 percent of students responding to the survey felt that public schools should teach basic values such as honesty, fairness, and responsibility (Bullard, 1992).

Personnel at Martin Marietta Corporation realized that inculcating ethics in education was not a simple task so they developed a board game titled *Gray Matters*. As a major contributor to the project, George Sammet chose the name because he felt the ethical decisions often involved a gray area. The game includes a process for making the most ethical choice with points assigned accordingly (Martin Marietta Corporation, 1992). In this study, we will examine high school students' responses to 25 hypothetical business scenarios involving business ethics.

Method

Participants Participants were high school students (Grades 9-12) enrolled in seven "Introduction to Business" classes from six high schools in Rapides Parish, LA. Permission to conduct this study was granted by the superintendent of the Rapides Parish School Board. Students' participation in this research was completely voluntary and their confidentiality was protected by answering the survey anonymously.

Completed surveys from 136 students (48 percent male and 52 percent female) were obtained which represented the response rate of 77.8 percent. The participants' age and the percentage of this age group in the sample were presented as follows: 14 years (12.6 percent), 15 years (25.7 percent), 16 years (30.2 percent), 17 years (16.2 percent), 18 years (13.2 percent), and 19 years (2.2 percent). Further, 47.1 percent of these students were employed, whereas 52.9 percent were never employed.

Measure The survey questionnaire consisted of 25 close-ended short scenarios. Participants were asked to indicated either (1) yes, they would, or (2) no, they would not take a specific action in a given situation. These items were developed based on scenarios and situations from the following three sources: First, a discontinued commercial game, *A Question of Scruples* (Milton Bradley, 1987), second, "Test IV: Are you an honest worker?" (Patterson & Kim, 1991), and third, "Do you do the right thing?" (Bullard, 1992). The content of this questionnaire was tested in a pilot study using a group of high school students and a panel of high school teachers for clarity. All these items are presented in Table 1.

Results

Table 1 shows the percentages of secondary vocational business students' "yes" and "no" responses for each item. These 25 items were grouped into four major categories: (1) opportunity within the organization, (2) pressure from the organization, (3) opportunity from other sources, and (4) pressure from other sources.

Opportunity Within The Organization In terms of opportunity within the organization, there are five sub-categories: attendance, effort, job search, use of time, materials, and money from work, and disgruntled worker. Results of these sub-categories will be discussed as follows. Table 1 shows that the majority of these students may go to work if they are required to work on that day. However, they may call in sick if given the opportunity to use their sick leave. The majority of them will give their total effort on the job (90.4 percent) and will not take credits for work done by others.

Most of them will not lie on their resume and will hire someone like them. It is interesting to know that they felt that it is not appropriate to look for another job on company time, whereas the majority of them felt that they would use office supplies, make personal calls, and give away free fries to a friend, and borrow money overnight if they were given the opportunity. Even if they were not happy with their jobs, they would continue to do a good job and would not sabotage the company.

Pressure From The Organization Under pressure, the majority of them would give in to protect themselves. However, they would not do illegal things and would tell the truth.

Opportunity From Other Sources When opportunity from other sources was available to them, these students tended to take the advantage of the situation. In three scenarios, their gains were results of someone else's mistakes. When the payoff is great (several million dollars for company secrets), it appears that a larger percentage of these students (73.5 percent) tended to take the advantage of it (under opportunity pressure) (see Item 21).

Pressure From Other Sources Students tended to offer truth to a company regarding reference and regarding theft. They were also willing to talk about their boss to others.

Discussion

The results of this study reveal the possible ethical decisions these students may make in their real life in the not-so-distant future. Their responses are not all that desirable. There is room for improvement. Business teachers and managers need to consider these issues very seriously and carefully.

However, it should be pointed out that all these participants are high school students from Grades 9 to 12. It is plausible that this is their first formal exposure to ethical issues in a high school class: Introduction to Business. They still have a long way to go in becoming business executives in the society and have many more opportunities to study these issues in the future.

Table 1. Participants' Responses on The Ethical Questionnaire

Questions	Yes	No	N/A
I. Opportunity Within The Organization			
A. Attendance			
1. You and a friend have been planning to go on a short trip over the Labor Day weekend. Your boss tells you Labor Day will not be a company holiday this year. Would you go to work?	55.1	44.8	
2. You have accumulated sick leave. You have used all of your vacation days. You have a unique opportunity to go on a special trip. Would you call in sick?	73.5	25.8	.7
B. Effort			
3. Would you give your total effort on the job?	90.4	9.6	
4. Would you take the credit for work done by someone else?	18.4	81.6	
C. Job Search			
5. Would you tell little white lies on a resume to get a job?	28.3	71.0	.7
6. If you were the boss, would you hire someone like you?	75.4	23.9	.7
D. Use of Time, Materials, and Money From Work			
7. Do you think that looking for another job on company time is OK?	22.1	77.2	.7
8. Would you use office supplies (paper, pen, white-out, paper clips, etc.) from your company for personal use?	77.9	22.1	
9. Would you make personal calls on your company phone?	72.8	26.5	.7
10. You have a summer job at a fast food restaurant. Would you consider giving free fries to a friend?	59.6	40.4	
11. You have a job in a small business. Do you think borrowing $20 overnight would be dishonest?	65.4	33.9	.7
E. Disgruntled Worker			
12. You have been passed over for a promotion and fell that the person promoted is not worthy. Would you continue to do as good a job as you have been doing?	79.8	20.2	
13. You feel that your company has taken advantage of you. You could easily sabotage the computer system. Would you consider doing it?	36.8	63.2	

II. Pressure From The Organization			
14. Recently your company has been accused of discriminating against women. When the next position opens would you hire the first qualified woman that applies?	62.5	36.8	.7
15. Your boss asks you to do something that involves breaking the law. Would you consider doing it if you thought your wouldn't get caught.	15.4	84.6	
16. You are a reporter. Someone has confided in you and asked that their name not be revealed. You are facing the possibility of being sent to prison if you do not reveal your source. Would you reveal the source's name?	79.8	20.2	
17. Would you tell the truth even if it meant losing your job?	62.9	36.4	.7
III. Opportunity From Other Sources			
18. When you return from the bank, you realize that the teller gave you too much money. Would you consider keeping the money?	62.5	37.5	
19. When you receive your paycheck you see that your boss has paid you for 40 hours even though you have only worked 35 hours. Would you consider keeping themoney?	65.4	34.6	
20. You receive your bank statement. You have $700 more than you should have in your account. Would you consider keeping the money?	61.8	38.2	
21. If you were offered several million dollars to reveal company secrets would you consider doing it?	73.5	25.8	.7
22. You are going on a business trip. Your company purchased the ticket. The airline offers to refund $500 of your ticket purchase if you give up your seat and take a later flight. You would still be able to keep your business appointment. Would you consider giving up your seat and keeping the $500?	70.6	29.4	
IV. Pressure From Other Sources			
23. An employee that causes problems in your company applies for a job with another company. When you are asked for a reference would you give a wonderful recommendation in hopes that someone else will hire them?	26.8	73.2	
24. Your best friend is stealing money from your place of employment. Would you say anything?	59.6	40.4	
25. Would you talk about your boss to others?	65.8	32.7	1.5

Note. N/A = No answer.

Students should be guided by proper ethical decision-making principles so that they will be able to advance to the highest stage of moral development. Morality is based on principled personal conviction. It is plausible that ethical thinking patterns may be formed early in life (a deep-rooted value system) which may be difficult to unlearn or change later in career. According to Kumar (1995), 24 percent of the students are classified as wheeler-dealers. To them, the end often justifies the means. This study show that 73.5 percent of students would reveal company secrets if they were offered several million dollars. It is possible that we may find all three types of people identified by Kumar in this sample (a less selective group than college students), wheeler-dealers, in particular.

An important factor here is that money talks. Money has a significant impact on people's behavior, performance, and effectiveness in organizations. People's attitudes toward money may also serve as their frame of reference when they face their everyday life (Tang, 1992). Given a large amount of money, those who value economic values and political values may have a strong tendency to capture the opportunity and take the advantage of it when it is presented. Future study may want to examine the possible differences between those who value money and those who do not when ethical decision-making behaviors are examined.

It appears that many of these scenarios offer either opportunity or pressure within the organization or outside the organization. Employees will also encounter these opportunities and pressures in their everyday life. Corporations and industry need an agree-upon standard on ethical behavior. All business managers need to combine a code of ethics with ethics training. Managers should also evaluate current ethics training programs to ensure correct ethical behavior is taught and rewarded. Further, it is also necessary to create an ethical organizational culture.

Corporations need workers with good ethical decision-making skills (Martin Marietta Corporation, 1992). These skills may have a major impact on their careers. Many people caught in ethical dilemmas feel that they just haven't asked the questions and they haven't had time to think about these issues. Most people only think about ethical issues when they're in the frying pan.

It has been suggested that when making ethical decisions, there are three important questions: First, is it legal? Does it violate civil law or company policy? Second, is it fair to everyone concerned (both short and long term)? Third, will I feel proud of myself? If my decision is known publicly, how would I feel? How would I feel if my family knew it (Edington, 1993)?

Even though there are no easy answers to common ethical dilemmas, students should become aware of some of the types of dilemmas they may face in life. Ethical reasoning is a necessary life skill. Many students in the present study only consider their personal gains when opportunity is presented. They have surely failed to realize the other parties involved in the scenarios.

Students are entering the American marketplace at a time of moral chaos. They are facing a dizzying array of ethical issues and dilemmas and are held personally and legally responsible for the choices they make. Yet, they have been given very little guidance in how that decision-making process would work. Education in moral responsibility is just as imperative as training in math and science. Though ideally, society as a whole is responsible for the ethical conduct of its constituents, education sometimes has to come forward and address social issues. Business communication teachers can and should have an influence on students and help them establish appropriate business ethics.

Statements by the Policies Commission for Business and Economic Education encourage students to use practical learning experiences and critical thinking skills to analyze ethical issues. The goal is to empower students with the necessary skills to transfer ethical decision-making and problem-solving skills from the classroom to the workplace. Research indicates that ethical conflicts arise when the beliefs or attitudes of workers do not match the beliefs or attitudes of the workplace. It is suggested that vocational ethics should provide workers with a means of identifying and resolving ethical conflicts within the work environment. By doing so could prevent them from making gross ethical misjudgments (Goree, 1992).

Ethics education should be an on-going process throughout the formal education of business students. Conducting ethical studies in the classroom allows students to communicate with each other and view things from many perspectives. Simply the experience of taking a stand and justifying that stand is an excellent way to increase self-esteem, thereby, giving students an opportunity to support their position with sound, rational thinking. The ethical scenarios examined in this study can be used as a measurement tool to evaluate the effectiveness of training programs on business ethics.

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The Meaning of Work: A Literature Review

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The meaning of work has been of interest to both classical motivation theorists and more modern "new age" writers and consultants. A literature search was performed and the limited number of studies that were found were analyzed to determine the scope and depth of research that has been conducted on this topic. A dichotomy between values, jobs, and satisfaction; and meaning, spirituality, and work were found to exist.

The managerial and popular literature is increasingly referring to individuals questioning the meaning and purpose in their work. Tichy (1983) claimed there are large numbers of people who feel a loss of purpose and meaning in the workplace. Maccoby (1988) specifically wrote about professionals questioning workplace purpose and meaning and the drive to align values in their personal and professional lives. Examples range from Tom Chappell (Tom's of Maine) questioning the meaning and purpose of his whole company to people featured in local newspapers who left their jobs for entrepreneurial opportunities or other endeavors more aligned with the meaning and values they seek.

Gayle (1997) reports that a plethora of literature exists to support the notion that individuals have an inherent need for a professional life that they believe is meaningful (Alderfer, 1972; Csikszentmihalyi, 1990; Herzberg, et al., 1959; Maslow, 1943, 1971; McGregor, 1960; Rogers, 1959, 1961). Maslow (1971) wrote that individuals who do not perceive the workplace as meaningful and purposeful will not work up to their professional capacity. Yet, with rapidly changing economic conditions, organizational structures, and job requirements, what once may have provided a measure of meaning and purpose for individuals in the workplace is eroding (Csikszentmihalyi, 1990; Shamir, 1991).

To understand what it is about work itself that seems to motivate individuals, we proposed to review the research based literature.

Background

There is a long history of research and discourse about what motivates employees and the relationship between job satisfaction, morale and performance/productivity. As organizations became more complex, assumptions about the power of rewards such as pay, security, and working conditions were questioned. In addition, the correlation between morale and productivity was challenged. In response, the human relations movement produced theories focused on human needs. This classic motivation literature referred to work itself as the primary motivator.

Maslow (1943, 1954, 1970, 1971), Herzberg (1959), McClelland (1965), and Alderfer (1972), theorized that individuals are motivated to take certain actions based on fulfilling needs believed to be inherent in all humans. These content theorists all proposed that as these needs move from basic survival needs to higher order needs, they become more intrinsic and reflective in nature. The higher order needs are translated to values, working toward a higher cause; meaningfulness and life purpose. (Given the brevity of this paper, the individual theories of the authors mentioned above will not be discussed in detail.)

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Vroom (1964) builds on the content theorists to develop the expectancy theory of motivation. Vroom focused on the individual's choices and perceptions. Valence, instrumentality, and expectancy were used to explain the strength of motivation based on the probability of achieving success and whether one act will lead to another. In the expectancy model, one's perceived effort as it relates to performance, the probability the performance will lead to a reward, and that the reward has value, drives the effort.

A few theorists have begun to move beyond the notion of the value of performing a set of tasks as a primary motivator. For example, after establishing his *hierarchy of needs*, Maslow (1971) began to explore the meaning of work. This exploration was expressed in his description of being values, referred to as *B-values*. B-values include truth, transcendence, goodness, uniqueness, aliveness, justice, richness, and meaningfulness. Maslow felt the work becomes a by-product of obtaining the goals of the B-values. A self-actualized person feels that work equates with play and both become an integral part of a person's being. Maslow equated B-values with spiritual values which he believed is a part of the human essence (Gayle, 1997).

Also noteworthy is the thoughtful discourse from Rogers (1961), Locke (1975), Ackoff (1981), and Shamir (1991). Rogers (1961) believed that people find purpose when they experience freedom to be exactly what they were in a fluid and changing manner. Locke (1975) wrote that people strive to attain goals in order to satisfy their emotions and desires. Ackoff (1981) described purpose and meaning as progress toward an ideal which converts mere existence into significant living by making choice meaningful. And lastly, Shamir (1991) reported that the task can be motivating due to its meaning for the individual, rather than for intrinsic rewards.

Further exploring the meaning of work would provide an opportunity to learn from where Maslow and others have left off.

Purpose The purpose of this paper is to determine what the research and theory-building literature informs us about the meaning of work. To our knowledge, a literature review about the meaning of work does not exist. It is believed that a review of this nature is important to: (1) develop a framework for understanding how HRD practitioners may impact workplace productivity and; (2) determine what gaps exist that warrant further research and theory-building.

Methodology A literature review of researched based articles, both quantitative and qualitative, was conducted. Business, psychology, sociology, and education literature was reviewed. The following databases were searched: ABI/Inform, Educational Resources Information Center, Psychological INFO (journal and articles), and Dissertation Abstracts. Keywords used in the literature search include: work values and beliefs, work and meaning, work and spirituality, motivation and meaning, motivation and high performance, purpose of work, work and personal growth. The resulting literature were reviewed and analyzed.

Significance of this work There is an increasing number of dissatisfied workers seeking alternative work opportunities or demonstrating a decrease in productivity. Classic motivation theories state the work itself as a primary motivator. Maslow and several current theorists have suggested the exploration of the meaning of work as it relates to motivation. Yet, a comprehensive literature review has not been done to assess what has been accomplished in this arena and more significant, what remains to be explored that may increase individual and corporate productivity.

Findings

Two major areas within meaning of work were identified in the literature review, values and meaning.

Values A preliminary keyword search identified a limited number of literature reviews, articles from scholarly journals and abstracts of doctoral dissertations on "values" as they relate to "work" and "spirituality." The initially daunting variety of concepts that appeared in these articles was sorted into four clusters: cognition, emotion, action, and outcomes. The cluster titles also suggest a process of value formation.

The cognition cluster includes key words like valuing, comparing, recognition and assessment. The cognitive dimension of valuing involves the determination of whether an option is worthy, either intrinsically or in relationship to some extrinsic outcome. Broenen described cognition in valuing as "making subjective rankings or judgments about variables in one's environment that may relate to how satisfying one considers one's job" (1990, p.2).

The emotion cluster includes concepts like, needs, desire, and affect. George (1996) found that research in subjective well-being suggested that values, attitudes and moods form a powerful triple interaction that can affect job satisfaction and turnover. Emotions also help energize or motivate action. Action/Result keywords include performance, behavior, and goal achievement as outcomes of value motivated activity.

An Operational Definition of Value Much of the research on organizational behavior and human resource management involves the interaction of individual values with the workplace (Coomey, 1988; Carlson, 1995). Coomey reported that her search of the literature uncovered widely diverse definitions of values which she eventually consolidated into one. According to Coomey's definition, values are the transformations that take place between actual or perceived outcomes (rewards, losses, etc.) and affective states (satisfaction, dissatisfaction, etc.) which lead to action (behavior, performance, etc.). She further explained that values derive from a vast number of contextual variables like: childhood, education, occupation, personal goals, stage in the life cycle, perceived equity, organizational climate, outcomes, and values themselves. It was suggested, therefore, that values, instead of being isolated entities, more closely resemble a system.

Four themes that elaborate the cognitive, emotive, and action/result dimensions of value and work also emerged from the literature: (1) intrinsic vs. extrinsic factors; (2) work values and quality of work life; (3) subjective well-being and happiness; and (4) working hard vs. working smart. The following research represents these themes.

Valuing Intrinsic and Extrinsic Factors. In 1986 Barker surveyed 479 secondary science and math teachers in four states for their assessments of the quality of their work life. He found that extrinsic values, including resources, support systems and workload were key to reducing the attrition of this group of workers. The perception of intrinsic factors--like growth, status and formal rewards--were less valued and presumably would be less effective in encouraging the desired career behavior of math and science teachers. Boman (1995) also explored the relationship of the valuation of intrinsic and extrinsic factors to the subjective state of job satisfaction, work values, and organizational commitment of part-time and full-time community college faculty members. She found satisfaction to be generally high with internal and external social factors but less so with extrinsic organizational factors.

Work Values & Quality of Work Life. Pine (1987) reviewed the research on work values (WVs) and found a reciprocal shift in cultural and individual WVs. From the macro level, cultural WVs are influenced by history, economics, and the society. These influence the psychological processes of beliefs, aspirations, expectations and affects in individuals. Kazanas (1973) measured perceptions of the value of work in vocational education. He concluded that students' work values and beliefs about work will have consequences in their future work satisfaction and productivity. Vocational educators must therefore plan and develop meaningful work experiences for students. Mottaz (1986) analyzed data from 1,385 male and female workers in a variety of occupations to assess gender differences in work values. He found no gender differences in work values in the higher occupational levels, but at lower levels males were more oriented toward intrinsic work values and females toward the social values of work.

Van Pletsen (1986) studied the interrelationship of work values, work expectancies, and quality of work life (QWL). He was primarily interested in how an employee's work values impact his/her individual QWL. He defined QWL as a principal output of the mutual interaction among structural elements of an organization (tasks, technology, environment, social system, etc.) as well as a key factor in individual motivation. QWL therefore is hypothesized to be part of both organizational functioning and individual motivation. For motivational factors the researcher used the expectancy values of effort-to-performance and performance-to-outcome. His findings supported his expectation of finding a positive relationship between an employee's work values and his/her QWL.

Broenen (1990) found that the relationship of values to job satisfaction had not been extensively reported in the psychological literature. So he looked at the baby boom generation to see if there is a relationship between their values and their job satisfaction. Baby boomers-- the largest population bulge in the history of the United States--had experienced powerful value-shaping experiences during the turbulent 1960's. Research had identified a high valuing of independence and support, and a low valuing of conformity for this population. Broenen measured job satisfaction for the age group in a variety of organizational settings. He found that, despite an expected conflict between the traditional organization and baby boomers, values were actually relatively high in workplace satisfaction, in addition to a positive correlation between benevolence and job satisfaction.

Subjective Well-Being and Happiness. Myers (1995) summarized numerous new studies that explore people's subjective well-being (SWB). Frequent positive affect, infrequent negative affect, and a global sense of satisfaction are three characteristics of high SWB. Religiosity and work experiences have also been found to be strong indicators of SWB. Patrick Townsend (1995) advised that a sense of humor and a sense of proportion should be nurtured when discovered in any employee at any level of organization. He believed that pride in work, and enjoyment of work generate enthusiastic cooperation, an invaluable asset in the continual improvement of both job and organization.

Working Smart vs. Working Hard. Sujan, Weitz & Kumar (1994) examined the effects of belief and self-concept on the effectiveness of salespersons. The study was based on previous findings in psychological studies that two distinct goals underlie people's behavior in achievement situations. One of these is "learning" and the other is "valuing performing." Salespersons who saw themselves as learners valued growth and worked smart. Working smart was defined as developing knowledge of sales situations and using this knowledge in selling behavior. They were willing to develop a repertoire of behaviors from which to select those most effective for a given situation. They were also more willing to take on challenges as an opportunity to learn, and they benefited from both negative and positive feedback. They were stimulated to work harder when necessary. By contrast salespersons who saw themselves as hard workers and high performers put in more time and persisted in their efforts in the face of problems. They also tended to see themselves as unchanging, and to benefit most from negative feedback and little from positive feedback. The study found that learning orientation motivates working both smart and hard, whereas performance orientation motivates only working hard.

The researchers refuted the assumption that smart and hard are opposites--where increasing one automatically decreases the other-- rather that the two vary independently of each other. Researchers also found that learning and performance orientations can be modified by supervisor feedback, but sense of self efficacy can modify the expected effects of performance and learning orientations.

Meaning of Work Csikszentmihalyi (1990) in his attempt to define meaning, readily acknowledged the difficulty the task presents by suggesting that any definition of the term would undoubtedly be circular. However, he points to three ways in which the word may be defined: (1) having a purpose or the significance of something, (2) the intentions one holds, and (3) identifying or clarifying the term in context. Similarly, one may attempt to define work. Dirkx (1995) subscribed to the theory that work is one of the ways that a mature adult cares for oneself and others. This was expressed by respondents in the Schaefer and Darling (1996) study who defined work as an opportunity for service to others and not distinct from the rest of life. The term may also be definitive of one's uniqueness and a way of expressing one's self in the world.

Adding the word "work" to meaning presents an even greater challenge at definition. Meaning of work suggests an inclusive state of being. It probably is that which seeks to define who we are, the purpose of our being, and the spirit with which we approach what we do. Put in a spiritual context, it is that which gives essence to what we do and what brings a sense of fulfillment to our lives. The literature indicates that meaning of work is a significant contributor to meeting one's purpose in life. Supporting conditions for its fulfillment are work spirit and the sense of being as founded in one's spirituality. These are regarded as cogent factors for finding meaning in one's work.

Wishner's (1991) study on the influence of the meaning of work, among other constructs on job satisfaction of school psychologists, yielded interesting results. Though the prediction that the meaning of work was prominent and intrinsically important was not confirmed, the construct itself proved the single best prediction of job satisfaction. This indication propelled the researcher to conclude that the meaning of work has a more pervasive role in the lives of individuals. Similarly Jaeger (1994), in investigating the self-employed concluded that among aspects of the Protestant work ethic, a need for meaningful work was the single most important descriptor which defined the individuals' sense of purpose in their contribution to the spirit of community living. Further, the researcher concluded that work was an accepted part of the participants' personal identity. It was that which brought meaning, enjoyment and satisfaction to their lives.

As indicated by Daum (1977), the meaning of work was no less significant for re-employed older workers. An investigation of 200 randomly selected re-employed workers aged 55 or over revealed that instead of economic reasons as was believed, the most frequently mentioned reason for continuing to work was a desire for meaningful life experience. More interestingly, the researcher indicated that persons who sought meaningful experiences from work tended to be of higher social class. This leads one to question if finding meaning in one's work is status related.

Work Spirit. It seems that one's ability to achieve meaning from one's work depends on what one brings to the work itself. Loscocco (1985) identified two elements - work commitment and work orientation and suggested that these are designators through which people come to and assign particular meanings to the work they do. In one aspect, work commitment represents the relative contribution of work to the sense of self, while work orientation reflects the importance people attach to the various types of rewards available from the work they do.

Together, these ideas are reflective of Connelly's (1985) concept of work spirit, the set of qualities exhibited by people who enjoy their work enormously. Among these qualities are a positive state of mind, a sense of purpose and vision, and a full sense of self. One group of participants in Connelly's study describes work spirit as a "ground of being," a continuing state of mind from which everything else emerges. Connelly concluded from this study that people who love their work and find meaning in it realize that their work experience, to some extent, is dependent on what they themselves bring to the experience.

Self, Spirituality, and Work. Shamir (1991) argued that current work-motivation theories should be augmented by the concept of self. He built a theory of self-concept-motivations on the following assumptions: that people are not only goal-oriented, but also self-expressive; that they are motivated to maintain and enhance their self-esteem, self-worth, and self-consistency. Shamir also postulated that self-concepts are composed, in part, of identities. He further suggests that self-concept-based behavior is not necessarily related to clear expectations or specific outcomes. These assumptions imply that work motivation will be increased when job related identities are prominent in the self-concept, and when the engagement offers opportunities for enhancing self-esteem and self-worth through actions that are consistent with the person's self-concept.

Pitts (1995) indicate that the ability to find meaning in one's work is an expression of one's sense of self. It seems then, that if people derive meaning from their work to the degree of work spirit or sense of being that they bring to the experience, that these contributors are grounded in who they are as spiritual beings. Neck and Milliman (1994) suggest that a central aspect of spirituality involves the meaning of one's work. The concept itself (spirituality) is multi-dimensional and may be expressed as a transforming power or an expressed desire to find meaning and purpose in life. It also suggests a desire to make a difference and create a meaningful world, or an inner wisdom and compassion. Sveinunggaard (1992) similarly describes one's spirituality as a transformational life experience which gives rise to a reaffirmation of self characterized by a contextual awareness of oneself as one journeys inward to discover the self.

The theory of self as expressed through spirituality is defined by Hartman (1996) as inclusive of all human experiences including work and one's experience of reality. Further, the researcher indicates that the meaning one encounters from this reality gives rise to the quest for significance. This theory is substantiated by a participant in the Schaefer and Darling (1996) study, who experienced work as a personal gift and an integral part of the spiritual journey that is life. Further testimony of the role of spirituality in work is articulated by McEnroe (1995) who claimed that the most significant factor contributing to outstanding leadership is the executives' strong inner core of spirituality which, among other competencies, include finding meaning in everyday life, what they do, and what happens to the organization.

Conclusion

Our purpose was to explore the literature around the theme of the meaning and purpose of work. Our search, which was focused but not exhaustive, uncovered a dearth of research-based literature. We did find a large number of books and articles offering professional opinion and theoretical discussion on this and related topics.

Our analysis of the research-based literature seems to point to a dichotomy between values and meaning in relation to work. The literature seems to refer to values as intrinsic motivaors to performing a job and deriving satisfaction from a job. The emphasis is on what the job means to us in terms of the congruence of the tasks with our beliefs, objectives, and anticipated rewards. Values are relatively easy to identify through instrumentation; and understanding the fit between values and job responsibilities significantly influences job satisfaction.

The meaning of work, on the other hand, . . ."comes from the inside out; work is the expression of our soul, our inner being" (Fox, 1994, p.5). The meaning of work is in and of itself much more subtle; as is the distinction between meaning related to work and values related to a job. The distinction seems to lie in the notion that a job is what we *do*; work is who we *are*. We get paid to do our job; we are successful if we achieve some goal or target. Yet, as Fox points out, much work in our society is not paid at all; for example, raising children, tending a garden, singing in a choir, or organizing youth activities. And Csikszentmihalyi (1990) found in his research on high performance, people in what he refers to as a "flow state" actually feel a sense of disappointment when they achieve the objective of their performance, because the act of performing is the motivator; not the accomplishment of the task.

Implications for the Field of HRD In this age of the "new employee contract" we need to pay attention to:

> . . . our whole selves at work, to admit that some work has no meaning to us and offers no possibility of joy, to examine what work will have meaning to us and seek such work, to meet our co-workers self-to-self, center-to-center, and to stop pretending that our interior lives don't matter. (Only then) will our work become more joyful (and) our organizations will flourish with commitment, passion, imagination, spirit, and soul (Richards, 1995, p.94).

When the emphasis on performance is paramount over all else, employees gradually lose the meaning of their work. Such loss of meaning affects attitudes, behavior, and overall mental health. Our profession needs to search for and implement new workplace models that address work as both a vehicle for production and individual and social development (Svendsen, 1997).

Implications for Further Research It seems obvious that more research needs to be done to determine the impact of values and meaning on work, performance, and organizational effectiveness. We also need to learn more about the interrelationship between values and meaning. Only then will we be able to support our beliefs and, possibly, convince organizations that meaning *and* work must go together.

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Measuring Organizational Learning: A Confirmatory Factor Analysis of an Organization Survey

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This study compares two schemes for measuring the four constructs inherent to Schwandt's (1994) model of organizational learning. The comparison examines the fit of the confirmatory factor analysis of each measurement approach to the actual data values from a large (N=1580) sample of employee responses obtained in a single company. Although reflecting completely different approaches to derivation, the models are nearly equal in their ability to reproduce the data. The implications are generally positive and suggest next steps to improve our ability to measure degrees of organizational learning in different settings.

One theoretical frame for organizational learning is Parson's General Theory of Action (Parsons, Bales, & Shils, 1953). Parsons' point of reference was that of a system, which he defined as being "made up of two or more *units* or *members* which interact with each other ... is conceived to be embedded in an environing situation" (Parsons, et al, 1953, p. 174). The General Theory of Action draws upon systems theory (Miller, 1955; Katz & Kahn, 1978; Burrell & Morgan, 1979; Bahg, 1990) and uses biological organisms as a model for the functioning of higher order entities, including organizations (Burrell & Morgan, 1979). The idea is that just as organisms seek to survive, so do higher-order systems including organizations. Parsons suggests four functional prerequisites which must be performed by any system in order to survive (Parsons, et al, 1953; Ritzer, 1992). These are: (a) Adaptation - the complex of actions which both *adapt* and *adapt to* the external environment; (b) Goal attainment - those actions which identify and achieve the goals of the system; (c) Integration - the complex of actions which governs the interrelationship between the elements of the system and the other functional prerequisites; and (d) Pattern Maintenance - those actions which create, maintain, and renew individual behaviors and cultural patterns within the system.

Applying these prerequisites to organizational learning, Schwandt identified four subsystems (Schwandt, 1994) which might help explain how members of organizations collectively engage in learning. Within Parson's Adaptation function, Schwandt defines Environmental Interface as an organizational learning related subsystem which functions "as the informational portal for the organizational learning system" (Schwandt, 1994, p. 19). This subsystem is comprised of interdependent activities which interpret signals both inside and outside the organization and which filter information brought into the organization. These actions are primarily environmental scanning efforts (Daft & Weick, 1984) which may include customer survey methods, public relations, and external networks.

Within Parson's Goal Attainment prerequisite, Schwandt identifies an Action/Reflection subsystem which amounts to the organization's methods for using information as a basis for action and subsequent reflection on those actions which creates knowledge. This enables the organization to not only achieve its goals, but also to understand the meaning of actions in order to make judgments about them. The actions of this subsystem include both day-to-day procedures and operations and major actions which have a significant impact on the organization's ability to adapt. The reflection upon these actions creates new knowledge referenced to goals and may include actions such as decision-making processes, evaluations, and inter or intra-group conflicts.

The Dissemination and Diffusion subsystem (Schwandt, 1995) falls within Parson's functional prerequisite of Integration. The purpose of this subsystem is to transfer information and knowledge

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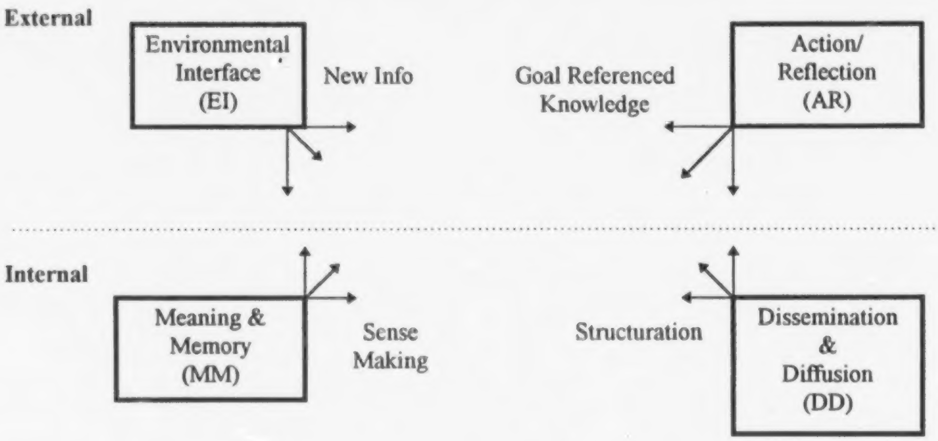
throughout the organization by means of formal (dissemination) and informal (diffusion) transfer mechanisms. The formal dissemination processes may include policies, communication technologies, and organizational reporting structures. Diffusion processes are more informal means of knowledge transfer and include actions such as networking, rumors, and informal communication.

Finally, the Meaning and Memory subsystem, included within Parson's Pattern Maintenance prerequisite, is the foundation "from which the other subsystems draw guidance and control" (Schwandt, 1994, p. 22). It is comprised primarily of symbols (such as language) and actions which stimulate a shared understanding (or meaning) of the culture, values, and assumptions of the organization. The memory element of the subsystem includes storage mechanisms such as organizational stories and histories, prior organizational actions, and organizational structure.

The Environmental Interface and Action/Reflection subsystems are both primarily externally focused, while Dissemination and Diffusion and Meaning and Memory are largely internally directed. These subsystems are highly interdependent so changes in one of the subsystems inevitably influence the functioning of the others. Schwandt (1995) called these patterns of interdependence "media of interchange." The functional prerequisites, learning subsystems, and media of interchange that make up this model of organizational learning are shown in Figure 1.

Figure 1. The Organizational Learning Model (Adapted from Schwandt, 1995)



By defining the specific components of organizational learning, this model provides an opportunity to develop psychometrically sound tools to measure the extent to which organizations are involved with organizational learning. To date, most research efforts to gauge organizational learning activities have taken place within selected organizations. However, the organizational learning concept is by nature one that should be applicable across organizations of various types in a range of industries. This study is a first step towards an empirical test of the constructs and structure of this model of organizational learning. That is, we make use of questions that were originally written for other purposes, but which can be logically related to the latent constructs in this model to examine two alternative measurement approaches. The first is based on the relationship of eighteen questions to the four constructs provided by a panel of twelve persons with previous training and education in the field of human resource development. Specifically, we asked this panel to relate the questions to the four latent variables. We then compare this measurement scheme to an alternative derived through exploratory factor analysis. The comparison examines the fit of the confirmatory factor analysis of each measurement approach to the actual data values in a large (N=1580) sample of employee responses obtained from a single company.

In making this comparison, we are attempting to determine if there are substantial differences between the structure of the two alternative approaches to measuring organizational learning, and whether one approach appears to be better than the other.

Methodology and Data

The sample for this study consists of 1580 members of a northeastern business-supply manufacturing and distribution company who responded to an organizational survey conducted in 1994. This sample represented 88% of the organization at the time of the survey. The questions used in this study were embedded in a survey which consisted of 134 questions, which covered demographic information, communication, reward system, resources, customer/market, and management practices besides organizational learning.

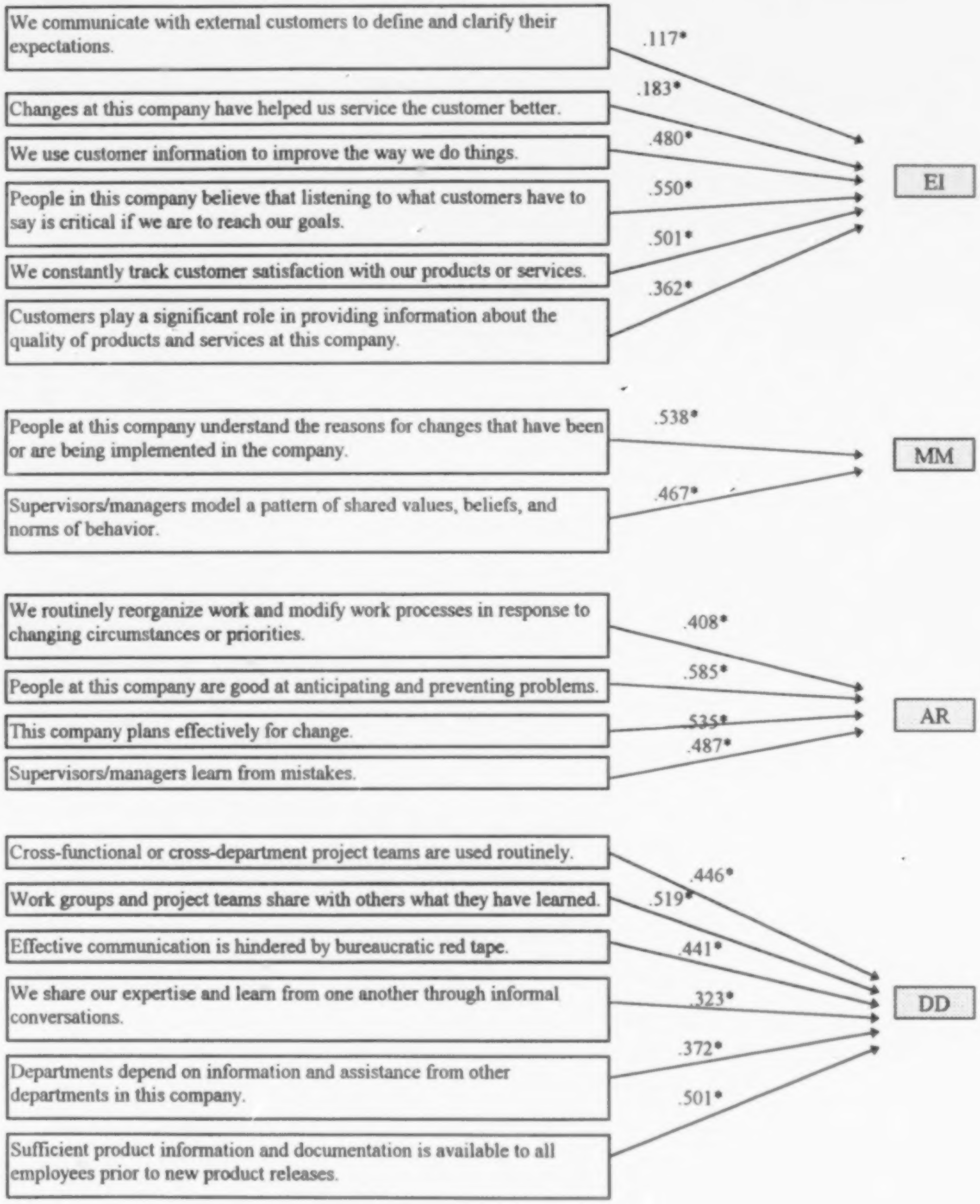
We initially identified 42 questions from the 134 in the complete survey that we associated *apriori* with the organizational learning constructs. We then asked a panel of 11 individuals familiar with the concepts of organizational learning through their current or previous studies as graduate students in human resource development, to associate the 42 questions with the four organizational constructs of Environmental Interface (EI), Action/Reflection (AR), Dissemination/Diffusion (DD), and Memory/Meaning (MM). We analyzed the interrater agreement of the associations made by the panel. For 22 of the questions, we found agreement in the assignments made by nine or more of the panel members. We then used one-half of the sample (N=790) to conduct an exploratory factor analysis, constrained to four factors to maintain consistency with the Schwandt model. We found in the exploratory factor analysis that four items had significant cross-loadings (greater than .40) on two or more factors. Those items which loaded on more than one factor were removed from both the measurement structure suggested by the panel (referred to as the Heuristic Model) and the measurement structure based on the exploratory factor analysis (referred to as the Empirical Model). The 18 questions included in both measurement approaches are shown Figures 2 and 3 below. Both measurement approaches were then subjected to confirmatory factor analysis via LISREL 8 using the remaining half of the sample (N=790).

Results

The results of the confirmatory factor analyses are presented below in Figures 2 and 3. These figures illustrate the relationship of the questions to the four constructs of organizational learning inherent to each measurement approach, as well as the overall goodness-of-fit measures for each confirmatory model. Based on the goodness-of-fit measures, the models seem to fit the measured data about equally well. That is, although the Chi-square for the Heuristic Model is significantly larger than that for the Empirical Model (indicating worse fit to the data for the Heuristic Model), the values of the other measures of fit (GFI, NFI, CFI, and RMSR) are the same or slightly better for the Heuristic Model. All of the path coefficients in both models are statistically significant. Considering all of this information, the Heuristic and Empirical measurement models do not appear to differ in terms of their ability to reproduce the data. However, except for the construct of Environmental Interface, both models associate different questions with the organizational learning constructs.

In further analyses, we also examined the internal reliability (coefficient alpha) of each of the multi-item scales in each measurement model. Only the reliability of Action/Reflection (AR) in the Empirical Model exceeded the value of .70, generally considered the minimum acceptable level for this reliability measure. The mean reliability across the four scales of the Empirical Model was slightly larger (.61) than the average reliability across the four scales of the Heuristic Model (.54).

Figure 2. Confirmatory Factor Analysis of the Heuristic Model of Organizational Learning


We communicate with external customers to define and clarify their expectations.
Changes at this company have helped us service the customer better.
We use customer information to improve the way we do things.
People in this company believe that listening to what customers have to say is critical if we are to reach our goals.
We constantly track customer satisfaction with our products or services.
Customers play a significant role in providing information about the quality of products and services at this company.
.117*
.183*
.480*
.550*
.501*
.362*
EI
People at this company understand the reasons for changes that have been or are being implemented in the company.
Supervisors/managers model a pattern of shared values, beliefs, and norms of behavior.
.538*
.467*
MM
We routinely reorganize work and modify work processes in response to changing circumstances or priorities.
People at this company are good at anticipating and preventing problems.
This company plans effectively for change.
Supervisors/managers learn from mistakes.
.408*
.585*
.535*
.487*
AR
Cross-functional or cross-department project teams are used routinely.
Work groups and project teams share with others what they have learned.
Effective communication is hindered by bureaucratic red tape.
We share our expertise and learn from one another through informal conversations.
Departments depend on information and assistance from other departments in this company.
Sufficient product information and documentation is available to all employees prior to new product releases.
.446*
.519*
.441*
.323*
.372*
.501*
DD

* $p < .05$

Chi-square with 129 df= 506.741; Root Mean Square Residual (RMR)= 0.0730; Goodness of Fit Index (GFI)= 0.922; Adjusted Goodness of Fit Index (AGFI)= 0.896; Normed Fit Index (NFI)= 0.672; Comparative Fit Index (CFI)= 0.729

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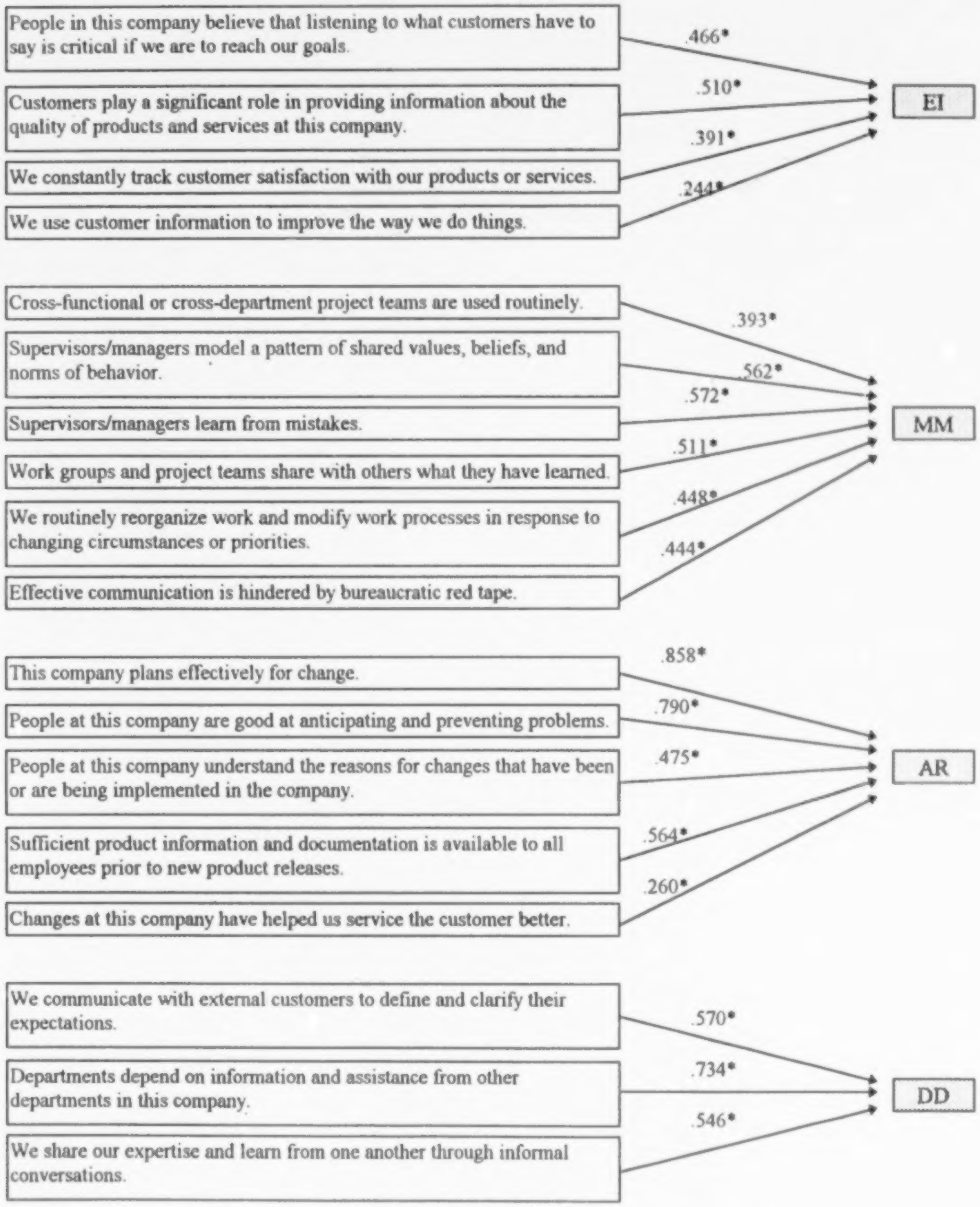
Figure 3. Confirmatory Factor Analysis of the Empirical Model of Organizational Learning



People in this company believe that listening to what customers have to say is critical if we are to reach our goals.	.466*	EI
Customers play a significant role in providing information about the quality of products and services at this company.	.510*	EI
We constantly track customer satisfaction with our products or services.	.391*	EI
We use customer information to improve the way we do things.	.244*	EI
Cross-functional or cross-department project teams are used routinely.	.393*	MM
Supervisors/managers model a pattern of shared values, beliefs, and norms of behavior.	.562*	MM
Supervisors/managers learn from mistakes.	.572*	MM
Work groups and project teams share with others what they have learned.	.511*	MM
We routinely reorganize work and modify work processes in response to changing circumstances or priorities.	.448*	MM
Effective communication is hindered by bureaucratic red tape.	.444*	MM
This company plans effectively for change.	.858*	AR
People at this company are good at anticipating and preventing problems.	.790*	AR
People at this company understand the reasons for changes that have been or are being implemented in the company.	.475*	AR
Sufficient product information and documentation is available to all employees prior to new product releases.	.564*	AR
Changes at this company have helped us service the customer better.	.260*	AR
We communicate with external customers to define and clarify their expectations.	.570*	DD
Departments depend on information and assistance from other departments in this company.	.734*	DD
We share our expertise and learn from one another through informal conversations.	.546*	DD

*p<.05

Chi-square with 129 df= 473.846; Root Mean Square Residual (RMR)= 0.0798; Goodness of Fit Index (GFI)= 0.929; Adjusted Goodness of Fit Index (AGFI)= 0.906; Normed Fit Index (NFI)= 0.776; Comparative Fit Index (CFI)= 0.824

Conclusions

The results of our analysis have a certain good news-bad news quality. One part of the good news is that taking completely different approaches to measurement methods, we derived models that are nearly equal in their ability to reproduce data collected from a large sample of organizational employees. The related bad news is that despite our anticipation, one of the models does not emerge as significantly better than the other.

Another element of good news is that the same four questions are related to the construct of Environmental Interface (EI) in each model. EI seems to have the greatest level of consistency between the models. The related bad news is that the questions related to the other constructs differ substantially between the two models. It is possible that these differences reflect the inability of the questions to adequately describe the nature of each of these constructs. If so, then we need to generate and test better questions. It is also possible that the inconsistency between the two models reflects an ambiguity in description of the constructs of organizational learning introduced by the framing of the questions. That is, the Heuristic Model is based on asking a panel to relate questions to constructs based on organizations in general. The Empirical Model is based on asking respondents the same questions within the context of a single organization in which they are employed. If the difference in the linkage of questions to constructs results from this difference in framing, we not only have to look for better questions, but perhaps ask future panel members to choose based on reference to a particular organization. The generalizability of the resultant measurement approach can then be empirically evaluated through testing in several organizations.

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Operationalizing Organizational Learning Models Using the Dechant/Marsick Instrument

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The Dechant and Marsick Team Learning instrument was used to operationalize Huber's (1991) and Schwandt's (1995) models for organizational learning. The resulting combination model may prove useful for researchers and managers of teams and cohorts. The redrawn model enables visualization of the learning process at individual, group and organizational levels. Findings were analyzed using this approach in an empirical study of two doctoral cohorts.

Organizational science researchers have proposed a number of models to explain organizational learning (Daft and Weick, 1984; Huber, 1991; Kim, 1994; Nonaka, 1995; Schwandt, 1995). Researchers of groups and teams in organizations have also looked at learning (Katzenbach and Smith, 1993; Marsick and Watkins, 1992; Ancona and Caldwell, 1987; Hackman, 1990). This article proposes a method to integrate this research and build a bridge from individual to group to organizational learning.

Background

Dechant and Marsick (1991, 1992, 1993) have developed an instrument for testing how well teams operate as learning groups. Team members respond to sixty questions in a paper and pencil test. Team members are then provided feedback on their team's profile.

In this study the Dechant-Marsick Team Learning Survey Learning Survey was administered to two doctoral cohort groups attending The George Washington University's (GWU) Human Resource Development Program. Application of the instrument, the results and the implications of the study are available from the author and outside the scope of this report.

The Literature

Literature in education discusses several benefits for cohort education (Barnett and Caffarella, 1992; Barnett and Muse, 1993; Geltner, 1993). However, group literature from organizational sciences suggests that, in addition to benefits, problems exist with groups and group dynamics. Cohort faculty and administrators can expect regression to fantasy states (Bion, 1961), paradox (Smith and Berg, 1987), disruption (Gersick, 1991, 1988), a need to span boundaries (Ancona, 1987), and critical issues of identity at formation (Hackman, 1990). Organizational researchers would expect the cohort group to meet socio-emotive needs (Blake & Mouton, 1984) and that irrational and rational mental states would co-exist in a systems dynamic (Parsons, 1938, 1951). Indeed, a dark side to groups exists involving groupthink (Janis, 1972) and scapegoating (Eagle and Newton, 1981). Feedback from the survey offers cohorts a method to manage issues of group dynamics that are central to making a group a team. Learning to be a team is the "process of aligning and developing the capacity of a team to create the results its members truly desire" (Senge, 1990, p. 236).

The Instrument

Dechant and Marsick's (1993) Team Learning Survey includes several scoring dimensions derived from five theories of learning processes: framing and reframing (Mezirow, 1991), crossing boundaries (Gladstein/Ancona, 1984, 1987), integrating perspectives (Ackoff, 1978) and experimenting (Bigge & Shermis, 1992).

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These five processes of learning are interrelated. Dechant and Marsick report that Cronbach Alpha measures and factor analyses did not "support the presence of separate factors in this scale" (Dechant and Marsick, 1993, Facilitator's Guide). The instrument elicits data on team learning outcomes, team learning processes, team members' appreciation for teamwork, individual expression in the group, and operating principles. Part two of the survey relates to organizational learning conditions (the context in which a team operates), organizational learning contributions, team operations and the climate for collaboration within the team's (cohort's) organizational setting. This study provided compatible, but slightly differing, information for the two cohorts.

Findings

The cohort (Cohort V) who had attended the program longer scored better but, in general, the scores were compatible. There were no strong favorable or synergistic scores. Differences between cohorts and teams may account for this finding. Cohorts are groups by design with individual performance goals. The rewards for cohort members are individual grades and degrees. Teams, especially successful teams (Senge, 1990), have a collective goal and collective accountability for performance. Collective team rewards is an area still open to research.

Conclusions

Cohort teachers and administrators can work with cohorts to develop collective goals (e.g., creating a learning environment). The Marsick/Dechant instrument offers a method to assess performance toward collective goals and to measure development of favorable and synergistic learning environments. Students can use their cohort as a real life laboratory to learn group dynamics and to develop their abilities as team leaders and players in organizations. Cohort experiences can also prepare facilitators of teamwork.

Implications of the Model

The Marsick model can be redrawn without distorting its dynamics to compare it with Huber's (1991) model for organizational learning. Huber posits four organizational learning constructs:

1. knowledge acquisition which is the "process by which knowledge is obtained" (Huber, 1991, p. 90) consists of congenital learning, experiential learning, vicarious learning, grafting, searching and noticing;

2. information interpretation which consists of cognitive maps and framing, media richness, information overload and unlearning (Hedberg, 1981);

3. information distribution which is essentially an integrating function for organizational learning because it is "the process by which information from different sources is shared" (Huber, 1991, p. 90); and

4. organizational memory which includes storing information for future use, retrieving information and computer-based memory.

Marsick's model can be redrawn into four aspects parallel to Huber's model. Consequently, a linkage can be made between Marsick's instrument and diagnosing organizational learning. This framework may prove useful to managers of teams or cohorts who wish to understand the organizational context and the reciprocal interactions of the cohort or team and its organization.

Dechant and Marsick's instrument provides data on team learning conditions, appreciation of teamwork and use of operating principles as well as organizational learning conditions (support of team operations and support for collaboration across the organization). These inputs help to create the context within which the combined Huber/Marsick Model functions. However, this combined model does not go far enough. It does not display the dynamics of the other learning functions of the Dechant and Marsick survey. An alternative solution is posed by the Schwandt (1995) organizational learning model. Schwandt's model is congruent with Huber's with one notable exception. He adds meaning. Schwandt includes meaning and memory as a pattern maintenance function in the structuration of a learning and sense making system. By including with meaning and memory the Dechant Marsick model's values for team and organizational learning conditions, the impact of these values and conditions in the learning process can be visualized. The resulting model is shown in Figure 1.

Figure 1

	Means	*Ends*
External	1. Knowledge Acquisition *Individual Expression*	2. Information Interpretation *Team Learning Outcomes & Organizational Learning Contributions*
Internal	4. Memory and Meaning *Values and Patterns of Team Learning* *Teamwork Appreciation & Operating Principles*	3. Information Distribution *Team Learning Processes: Frame/Reframe* *Integrating Perspectives Crossing Boundaries for Experimenting* *Support for Operations of Teams & Support for Collaboration*

Teamwork Appreciation and Operating Principles reflect individual and organizational values that guide the learning system. In quadrant three, the integrating functions of Support for Operation of Teams and Support for Collaboration are evidence of organizational norms for teamwork. The individual learning functions of Framing and Reframing, Crossing Boundaries and Experimenting provide means of integrating learning utilizing normative functions for transaction and transformation of learning.

Further empirical study needs to be conducted to test this combined construct using Marsick's instrument and Schwandt's model of dynamics of learning and performing (Schwandt, 1995). The Dechant/Marsick instrument provides the data for each of the four quadrants of this model. This data could be supplemented with qualitative data from interviewing team members or observing teams in action.

This study's data is depicted in the Huber-Marsick-Schwandt model in Figure 2. Quadrant 2 is representative of outcomes or results. Cohort V appears to have more positive results than cohort VI. Because Cohort V has an integrating function (Quadrant 3) that is pooled, bordering on synergistic, it is better able to achieve more positive outcomes than Cohort VI. Parsons, Bales and Shils (1953) and Hare (1962) speculate that cybernetic hierarchies operate in these learning systems. Consequently, strong integrating functions can produce results even if environmental interface functions, such as knowledge acquisition, are relatively weak.

Figure 2

	Means	*Ends*
External	1. Knowledge Acquisition *Individual Expression* Cohort V: unfavorable Cohort VI: unfavorable	2. Information Interpretation *Team Learning Outcomes* Cohort V: favorable Cohort VI: neutral *Organizational Learning Contributions* Cohort V: neutral Cohort VI: unfavorable
Internal	4. Memory and Meaning *Values and Patterns of Team Learning* *Teamwork Appreciation* Cohort V: neutral Cohort VI: unfavorable *Operating Principles* Cohort V: neutral Cohort VI: neutral	3. Information Distribution *Team Learning Processes: Frame/Reframe* *Integrating Perspectives* Cohort V: pooled/synergistic Cohort VI: fragmented *Support for Operations of teams* Cohort V: neutral Cohort VI: unfavorable *Support for Collaboration* Cohort V: neutral Cohort VI: neutral

The analysis of the findings in this study using the combination Marsick-Huber-Schwandt model indicates the quadrants that may be useful as starting points for teachers, administrators and cohort members who seek to strengthen team learning in cohorts. For example, the starting point for Cohort VI is to work on integrating factors to achieve more pooled and less fragmented learning processes. Further research is needed using the instrument and the learning models for diagnosis and intervention.

The Dechant/Marsick instrument offers a linkage between individual, group and organizational learning. It can be useful as a diagnostic tool and to indicate learning at multiple levels of analysis. Teams and cohorts express the fundamental concerns of group process (Lewin, 1947). Research that integrates both areas promises to be rewarding for both team learning and cohort development.

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Measuring Dimensions of the Learning Organization

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This paper reports preliminary findings from an ongoing instrument development and validation study of dimensions of the learning organization. The research project involved use of the survey across numerous organizations to establish reliability and validity and the development of emerging norms for each scale dimension.

Despite long term interest in the concept of the learning organization, little has been done to empirically document and explore the phenomena. On the one hand, there has been considerable conceptual confusion about the nature of learning at the organizational level (Meyer, 1982, Watkins and Marsick, 1993, Argyris and Schon, 1978 and 1996, March and Olsen, 1976, Fiol and Lyles, 1985). On the other hand, few organizations have implemented the idea at a level that would permit intensive study. Therefore, the purpose of this research was to develop and validate a measure of an organization's current state relative to key components identified with the learning organization. Additionally, this study sought through exploratory analyses to begin to identify cross-organizational means on key dimensions of the learning organization.

Two research questions were answered in this study:

1. Can an internally reliable instrument measuring dimensions of the learning organization be developed?
2. Does the instrument demonstrate content and predictive validity?

Theoretical Framework

The theoretical framework undergirding the research is a model of the learning organization developed by Watkins and Marsick (1993, 1996) in which critical changes which must occur at the individual, group, organizational, and system levels were identified based on an extensive review both of learning organization literature and practical learning organization experiments. These action imperatives form the basis for the Dimensions of the Learning Organization Questionnaire (DLOQ) used in this study. Six dimensions were identified in Watkins and Marsick (1993), and an additional dimension concerning the overall leadership required to implement these action imperatives was added in their later work (Watkins and Marsick, 1996). These dimension are: create continuous learning opportunities, promote dialogue and inquiry, promote collaboration and team learning, empower people toward a collective vision, establish systems to capture and share learning, connect the organization to its environment, and provide strategic leadership for learning.

Methodology

This is an instrument development and validation study. An item pool was generated by the instrument authors based on behavioral evidence of each dimension identified in their research on the learning organization. Respondents rate each item in terms of how things are now and how they should be on a six point Likert type scale from "almost never true" to "almost always true." For instrument consistency, each scale consists of six items developed by Watkins and Marsick as reflective of their theoretical framework. Items were further refined through item analysis by graduate students in two universities for coherence and readability.

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Three stages of field testing were conducted to ensure the reliability and validity of the scale. In each of the stages, managers and human resource developers from different organizations filled out the scale with regard to the learning organization dimensions as reflected in their organization or work group. Their responses were then coded and analyzed using the Statistical Package for the Social Sciences (SPSS, Inc., 1989). An item analysis procedure was performed. Reliability testing enabled revision of the surveys into their final form. Analysis of alpha coefficients for each scale identified items with low item-total correlations. These items were replaced or revised in later versions with an overall eye toward content validity. The field tests continued until acceptable reliability and content validity were achieved. In addition, a response set was added to the third version of the scale which permitted respondents to indicate the extent to which their work group or organization should be implementing each item. This scale was added in order to permit organizations to identify their own level of agreement with the item. This process enabled individuals and organizations to establish their own norms while permitting the researchers to verify the content and face validity of the scales.

Data Sources and Evidence

The surveys were distributed to a non-random sample of respondents from multiple organizations. For version three, we received 191 usable surveys, 71 surveys were returned for version 2, and 48 surveys for version 1. Only data from version 3 are reported here.

Results and Conclusions

Findings for each of the research questions are given below.

1. Can an internally reliable instrument measuring dimensions of the learning organization be developed?

The following data in Table 1 is based on an N of 191 for scale means and 116 for reliability estimates (except for the leadership dimension which was added later and for which there were 74 responses and the newest "measuring results" scale for which there were 60 responses).

Table 1. Means and Alpha Scores by Scale

Scale Name	N	Mean [based on a six point scale]	Alpha
Continuous Learning	191	3.66	.816
Inquiry & Dialogue	192	3.63	.870
Team Learning	186	3.44	.862
Structures to Capture Learning	189	2.82	.846
Empowerment	184	3.18	.851
Systemic Connections	186	3.51	.857
Providing Strategic Leadership for Learning	74	4.38	.831
Measuring Results [combined]	61	4.16	.818
Financial Results	61	4.21	.768
Knowledge Results	61	4.11	.779

Changes to version 3 of the DLOQ addressed within people variance detected in the first two versions, particularly in the dimensions of "creating embedded structures to capture and share learning" and "providing strategic leadership for learning." Questions which accounted for the highest variance were altered and a self-norming scale was added. Between scale correlations were all acceptable in the earlier version, ranging from .42 to .80 and .47 to .73 in the current version. Further analysis is ongoing to secure a sample size sufficient enable exploratory factor analysis to establish empirically-derived dimensions of the learning organization.

Results indicate Cronbach's Alpha coefficients for each dimension of the scale range from .716 to .859 on the current version. Overall, the reliability estimate for the entire scale is .945 for the 42 item version of the instrument. Reliability estimates for the new organizational results scales are also high, ranging from .768 to .818. This study suggests that a reliable instrument measuring the dimensions of the learning organization can be developed.

2. Does the instrument demonstrate content and predictive validity?

Since the items were generated by the authors based on the theoretical framework which undergirds the instument, content validity was obtained through their expert analysis. In addition, exploratory factor analysis will enable the generation of an empirically derived model of dimensions of the learning organization. A preliminary run of a confirmatory factor analysis procedure confirmed the presence of six factors, five of which correspond to the scale categories designated by the authors. A larger N is required to complete the procedure.

In addition, content analysis was further examined by the degree of consensus across respondents that these dimensions of the learning organization should be present in their work groups or organizations. Means for "should be" responses are given in Table 2 below [N=191]. ranged from 4.98 to 5.53, indicating fairly substantial agreement with the dimensions identified by the scale authors. Only the empowerment scale fell below five points on a six point scale. Overall, then, content validity has been established through theoretical consistency and expert analysis.

Table 2. Means & Standard Deviations for "Should Be" responses for each of the dimensions of the learning organization

Dimension	Cont. Lrng	Inquiry & Dialogue	Team Learning	Embedded Structure	Empowerment	System Connections	Provide Leadership [N=72]
Means	5.50	5.53	5.16	5.13	4.98	5.17	5.46
Standard Deviation	3.87	3.60	5.34	5.22	5.03	4.53	2.51

Table 2 confirms the widespread agreement anong respondents with these dimensions of the learning organization.

Predictive validity refers to the extent to which the instrument scores predict criterion measurement (Crocker & Algina, 1986). It is reasoned that the instrument's predictive validity will be shown if scores on the dimensions of the learning organization can successfully predict organization performance. A set of twelve items were constructed to measure a construct of organization performance. These measures were added to the DLOQ and distributed to 2949 family business leaders within a two hour driving radius of Atlanta, GA. A total of 66 usable responses were collected to study the predictive validity of the instrument. Item analysis procedure showed that the 12 measures of organization performance had acceptable reliability estimates and the coefficient alpha was .818. Furthermore, these items showed strong internal consistency as the overall reliability estimate would not be significantly improved by simply discarding inappropriate items.

In order to determine the predictive validity of the DLOQ in terms of organization performance, multiple regression analysis was conducted where the measure of organization performance was designated as a response variable and scores on seven dimensions of learning organization were treated as predictor variables. The regression analysis results indicated that the multiple correlation between learning behaviors measured on seven dimensions of the DLOQ and the measure of organization performance was statistically significant ($p < .05$). The estimated multiple correlation coeeficient was .570 and the R-square was .324. In other words, nearly one third of the variation in organizational performance can be explained by the organizational learning behaviors measured on the DLOQ. That is to say, the DLOQ showed strong predictive validity in predicting overall organization performance.

Educational and Scientific Importance of this Study

This study is significant to our understanding of the learning organization because it enables us to begin to track movement across critical dimensions over time and to begin the process of determining norms for this type of change effort. Future research efforts are focused on creating an empirically derived model of the learning organization which may enable us to predict under what conditions organizations will make the necessary changes to facilitate this transformation (Watkins and Marsick, 1996), whether or not these changes correlate with higher financial or knowledge results, and to determine differences in implementation across organizations. Further research on these outcome measures of organizational learning will allow organizations not only to track their progress in implementing the learning organization construct, but also to monitor whether or not their implementation is yielding higher levels of learning and financial performance at the organizational level.

Finally, this scale focuses on the organization as the unit of analysis. Future studies will focus on obtaining large scale samples within single organizations to guide learning organization implementation efforts. For example, a recent use of the scale by a major consulting firm's strategic planning group for human resource development enabled the development of areas of strategic leverage where the organization identified a significant gap between where it is and where it should be, areas of strategic advantage where the organization was significantly above the norm, and areas of strategic disadvantage where the organization was significantly below the norm for each dimension of the learning organization. Action planning focused on identifying the high priority areas the organization wanted to address in the coming year, and specific strategies to address the strategic areas identified. An adaptation of the DLOQ was created for potential use with customers for comparison with the organization's responses.

Since positive evidence of validity and reliability for the instrument was found, the instrument will provide a useful tool for future research on dimensions of the learning organization.

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Finding Common and Uncommon Ground among Learning Organization Models

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We present the results of the first critical look of its kind at conceptualizations of learning organizations behind existing models. By comparing models of learning organization scholars to an overarching framework, we are able to identify areas of consensus or divergence. Our analysis also offers insights into areas in need of further theoretical development and empirical investigation.

Since the 1980s, several forces have combined to increase the emphasis many companies are placing on organizational learning. Rising competition in global and domestic markets and the accelerating pace of technological and societal change have demanded that organizations adapt rapidly to changing opportunities and constraints. For most companies, the new focus on learning is part of a quest to retain and improve competitiveness, productivity, and innovation in uncertain technological and market circumstances. In turbulent times such as these, many argue that long term competitive advantage lies with organizations that develop core competencies which enable them to create new products and services swiftly and thus adapt to changing opportunities.

While theories of organizational learning are not new (for example, Argyris and Schon, 1978; Cangelosi & Dill, 1965; Cyert & March, 1963; Fiol & Lyles, 1985; Hedberg, 1981), recently many scholars and practitioners have shifted the focus from organizational learning as a product to a proactive process which they predict will result in better systems level learning. These models speak to the creation of "learning organizations," a formulation that has been popularized in the United States by Senge (1990).

Learning organization models have proliferated within the United States and around the world. Architects of these models often hold very different views about what is needed to create learning at the systems level, and how the changing nature of organizational life and work affects their models. The lack of conceptual clarity and consensus reflected in these diverse views has made it difficult to pursue a clear research agenda tied to theory about change from which to determine the effectiveness of different interventions in achieving desired learning organization outcomes. Our limited knowledge about the effectiveness of interventions based on learning organization models has, in turn, made it difficult for organizations to choose among competing models and instruments when they wish to use the learning organization concept to assess themselves and guide change.

Some theorists have tried to identify core components that seem essential to their models of the learning organization and have created instruments to diagnose and change organizations in consonance with their underlying models. In this paper, we seek to identify common ground among a number of these learning organization models by identifying and analyzing the core components and manifestations which they share.

Research Questions

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To date, no systematic effort has been undertaken to compare existing learning organization models and instruments, or to assess the current state of conceptual development upon which they rest. In light of this, we framed our research questions as follows:

1. In what ways is the concept of the learning organization being interpreted and defined?
2. What patterns, if any, can be identified among core components of different models when assessed against a common overarching framework?
3. What, if any, are the areas of theoretical consensus across models of the learning organization?

This paper presents the results of our research comparing and contrasting learning organization models that were created by a sample of scholars and experts in the United States, Canada, and Europe. We sought to compare a set of models of the learning organization in order to identify what, if any, commonalty could be found across models, where there were differences, and what implications these patterns held for the current state of conceptualization and future research on the learning organization.[1]

Methodology

In 1995, we identified more than twenty-five researchers and practitioners who had developed about a dozen models and diagnostic instruments aimed at conceptualizing and building learning organizations.[2] We asked participants in the study to assess core components of their models and instruments against a common overarching framework called the Learning Organization Assessment Framework (LOAF) (Gephart, Marsick, Van Buren, Spiro, & Lucadamo, 1995) which we developed based on a review of the existing literature and of selected diagnostic instruments.

In creating the LOAF, we adopted an organizational systems perspective to identify the various systems at work in learning organizations and assess their importance in existing models. We looked at underpinnings of the learning organization in three major categories: levels of learning; a set of facilitating organizational systems that need to be in place to support learning; and change management. Table 1 (next page) displays the subcategories included under these three major categories.

The framework consisted of two major sections. The first section contained a comprehensive list of learning organization components found in existing models, grouped under the above categories. The second section provided a number of behavioral indicators for the components in each level of learning orientation and each facilitating organizational system.

Participants in the research were asked to rank each category and component in the framework according to its importance in their learning organization models. They were also asked to rate each behavioral indicator according to its relevance to their model. Two thirds of the participants in the study provided self-assessments of their models using the LOAF. Using these data and the literature review, we conceptualized common and uncommon features of learning organizations in order to advance theoretical insights and provide a foundation for future research on the topic.

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[1] For a comparison of diagnostic assessment tools included in this study, see Van Buren & Lucadamo (1996). For a discussion of our analysis and conceptualization of learning organizations that resulted from this study, including supporting examples, see Gephart, Marsick, Van Buren, & Spiro (1996).

[2] Models and instruments in this study were created by the following scholars who participated in this research: Giorgio Bertini, Tom Boydell, Bettina Buchel, John Burgoyne, Terry Campbell, Ralph Catalanello, Kathleen Dechant, Tony DiBella, Nancy Dixon, Elizabeth Kasl, Michael Marquardt, Victoria Marsick, Alan Mumford, Glenn Nilson, Michael O'Brien, Judy O'Neil, Dimitrios Pachis, Mike Pedler, Gilbert Probst, John Redding, Angus Reynolds, David Schwandt, Ron Short, Massimo Tomassini, David Ulrich, Karen Watkins, Paul Wooler, and Lyle Yorks.

Table 1

- ❖ Learning Orientations
    - Individual
    - Group/Team
    - Organizational
- ❖ Facilitating Organizational Systems
    - Vision and Strategy
    - Leadership and Management
    - Culture
    - Structure
    - Systems and Processes:
        - Communication, Information, and Knowledge Systems
        - Performance Management and Support Systems
        - Technology
- ❖ Change Management

Results

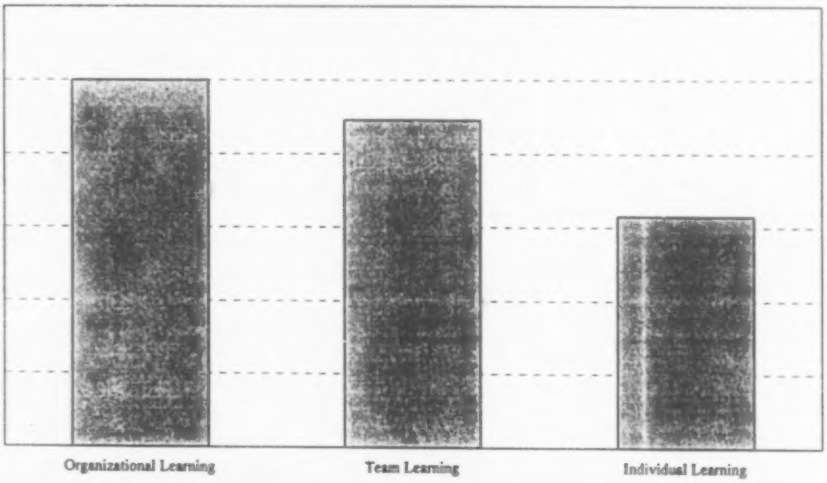
Our analyses allowed us to identify key components of the LOAF that seem essential to most models and to identify components that differentiate among existing models of learning organizations. We looked at the data in several different ways.

First, we examined the mean rankings for the categories of the LOAF listed in Table 1. As shown in Figure 1, respondents ranked organizational learning as the most important level of learning in their models. Team learning ranked second in importance, and individual learning last. Models of the learning organization tend to differentiate themselves from other work on learning and organizations by emphasizing the way in which organizations as systems can learn.[3]

Figure 1

Levels of Learning

Relative Importance



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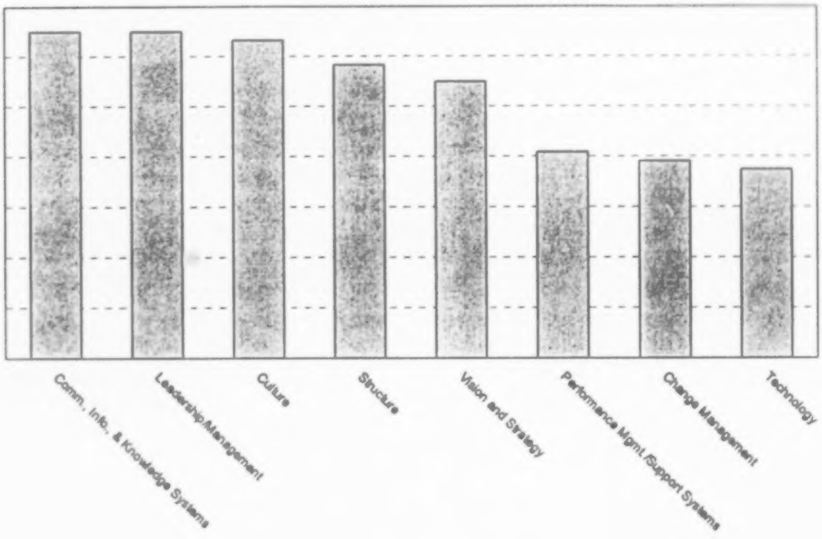
[3] We recognize that there is a debate in the literature as to whether organizational learning is a metaphor or a reality, given that individuals actually do the learning, even though systems can reflect a collective pool of shared resulting knowledge.

Figure 2 shows the relative rankings among the remaining categories of the LOAF. Among the categories of facilitating systems, systems for communication, information, and knowledge, and leadership and management led the rankings, followed by the organization's culture. Trailing in the rankings were performance management/support systems, change management, and lastly technology.

Figure 2

Facilitating Systems

Relative Importance

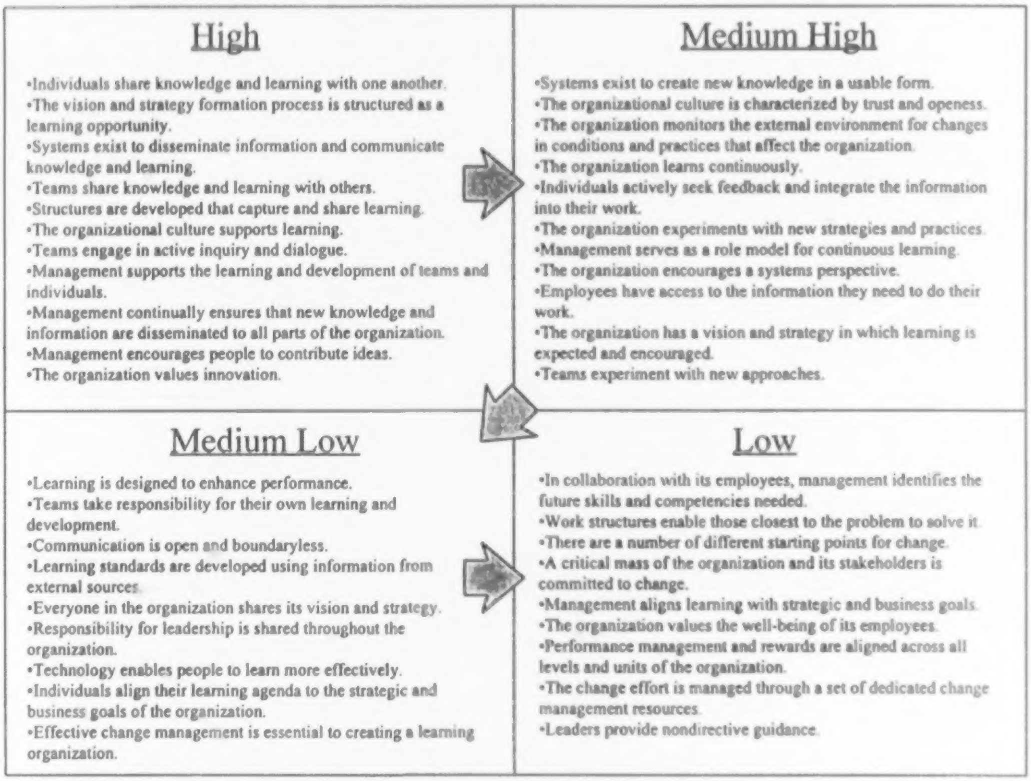


Next we examined the ratings respondents gave to the components within each of the LOAF's categories. We paid special attention to the means and standard deviations of their ratings (on a scale of 1 to 5, with 5 indicating greatest importance). To interpret the results, we found it helpful to divide the learning organization components in our framework into four groups on the basis of their standardized ratings (see Figure 3, next page). Components with z-scores of 1.0 or more above or below the grand mean were designated "high" and "low" respectively. Components with z-scores between .5 and 1.0 were designated "medium high" or "medium low" respectively.

Looking at the means and standard deviations of the components in tandem was particularly helpful in interpreting the results. Almost without exception, components which received low ratings had large standard deviations, while components rated highly had small standard deviations. (The correlation between means and standard deviations was -.80.) There is thus considerable consensus across models of the learning organization about the importance of components in our framework that were highly rated. In contrast, there is considerable disagreement across learning organization models about the importance of components in our framework that received low ratings. Some models consider the components with low ratings to be important; others do not.

When the items in the high and medium high categories are examined, several observations stand out. Highly rated items reflect the emphasis in Figures 1 and 2 on organizational learning; communication, information and knowledge systems; leadership and management; and culture. The majority of the items speak to an understanding of systems level learning that is characterized by knowledge generation, sharing, management, and utilization. Many of these items emphasize ways to examine and make sense of the changing environment, generate or capture knowledge and information, share ideas, and disseminate, store, or retrieve information. Items speak to a culture that values support for learning, collaboration, systems thinking, innovation, trust and openness; and to leaders who model learning and who structure vision and strategy as opportunities for learning. Individual learning practices emphasize feedback, inquiry and dialogue, experimentation, and knowledge creation.

Figure 3



High

- Individuals share knowledge and learning with one another.
- The vision and strategy formation process is structured as a learning opportunity.
- Systems exist to disseminate information and communicate knowledge and learning.
- Teams share knowledge and learning with others.
- Structures are developed that capture and share learning.
- The organizational culture supports learning.
- Teams engage in active inquiry and dialogue.
- Management supports the learning and development of teams and individuals.
- Management continually ensures that new knowledge and information are disseminated to all parts of the organization.
- Management encourages people to contribute ideas.
- The organization values innovation.

Medium High

- Systems exist to create new knowledge in a usable form.
- The organizational culture is characterized by trust and openess.
- The organization monitors the external environment for changes in conditions and practices that affect the organization.
- The organization learns continuously.
- Individuals actively seek feedback and integrate the information into their work.
- The organization experiments with new strategies and practices.
- Management serves as a role model for continuous learning.
- The organization encourages a systems perspective.
- Employees have access to the information they need to do their work.
- The organization has a vision and strategy in which learning is expected and encouraged.
- Teams experiment with new approaches.

Medium Low

- Learning is designed to enhance performance.
- Teams take responsibility for their own learning and development.
- Communication is open and boundaryless.
- Learning standards are developed using information from external sources.
- Everyone in the organization shares its vision and strategy.
- Responsibility for leadership is shared throughout the organization.
- Technology enables people to learn more effectively.
- Individuals align their learning agenda to the strategic and business goals of the organization.
- Effective change management is essential to creating a learning organization.

Low

- In collaboration with its employees, management identifies the future skills and competencies needed.
- Work structures enable those closest to the problem to solve it.
- There are a number of different starting points for change.
- A critical mass of the organization and its stakeholders is committed to change.
- Management aligns learning with strategic and business goals.
- The organization values the well-being of its employees.
- Performance management and rewards are aligned across all levels and units of the organization.
- The change effort is managed through a set of dedicated change management resources.
- Leaders provide nondirective guidance.

It is harder to identify clear patterns among the items in the low and medium low categories because of the variability in the responses. Many of the lowly rated items fall into the areas in Figure 2 of performance management, change management, and technology. One is struck by the level of disagreement that exists regarding some of the components in these categories. Components such as the value of sharing responsibility for leadership, vision and strategy, team goal setting, decentralized decision making and the identification of needed competencies are central to some models and downplayed by others. Valuing the well being of employees is among the lowest rated components, and yet, many models emphasize caring and nurturing of human resources. Other items ranked low reflect disagreement about the value of practical tools needed to implement learning visions.

Discussion

The learning organization has been pushed by a need to cope with rapid change, and has been pulled by visions of ideal transformation and growth. For the most part, models have been crafted to meet these needs based on observation of best practices. Their architects have turned to pioneer theorists in organizational learning and design for frameworks to explain their experience and for tools to move practice forward.

The early pioneers of organizational learning and design to whom they turned, however, developed their theories in a more stable period of history when organizations were hierarchical, command-and-control bureaucracies. The new paradigm values learning, social cooperation, and self regulation instead of tightly circumscribed jobs, close supervision, and entrenched cultures of control. Learning organization models speak to removing barriers (of structure, culture, and systems) to learning and change, and to a prevailing emphasis on transformative and adaptive growth.

The designers of learning organizations incorporated a mix of knowledge bases to explain the phenomena they faced. Models of the learning organization are thus eclectic, and reflect a variety of intellectual disciplines and professional fields of practice. Theory is being written as their creators move forward, which may partially account for the different emphases in these models.

The heart of the change process seems to be a search for better, faster, and deeper knowledge to enhance systems performance in light of rapid shifts in a changing environment. The emphasis on systems level thinking and learning reflects, in part, a need to foster social cooperation and interdependence in organizations that are flatter, decentralized, and interconnected. Chaos theory helps to explain why and how more people in the system must participate in knowledge creation and idea generation. Innovation theory explains the need for the simultaneous balance of apparently paradoxical concepts such as alignment and disequilibrium. Learning theory seeks to carve a path toward rapid and effective knowledge creation.

There also appears to be a disenchantment with change management in many of these models. It is not clear if this is a deliberate reaction against old-paradigm views of change and/or values, a reflection of the visionary bent of these theorists, or a lack of attention to making implicit change theory more explicit. Nonetheless, we think that many models actually reflect the influence of early work by Kurt Lewin (1947) on the dynamics of change in social environments and on action research, as well as socio-technical systems theory (Emery & Trist, 1963). Lewin emphasized the central role of collective, participative experiments and feedback for effective social change. He focused on unfreezing, and on the interaction of people with their environments. Building on Lewin, Emery & Trist pointed to the role of environmental turbulence in change, and advocated the redesign of work from the bottom up to achieve the joint optimization of social and technical systems. They pioneered the creation of redundant functions through multiskilled teams to support the flexibility and innovation needed to deal with rapid shifts in markets, technologies, lifestyles and jobs, and to remove the barriers to learning and change posed by controlling supervision.

The emphasis in these models on systems-level learning is driven, in part, by the need to change the organization so that new forms of work and being can emerge, and so that the organization can remain competitive. This is a management-driven agenda, which may account for the relatively weaker focus on individual learning. However, many architects of these models also value individual growth and development, and build a case for both personal transformation (O'Brien & Shook, 1995; Short, 1990) and for employability, a case that is being made by some union advocates. Underemphasis of individual learning may reflect the taken-for-granted assumption that individuals must learn for systems to learn, but the relationship across levels of learning has not yet been clearly articulated.

Culture can be an intractable barrier or an important facilitator, so several key aspects of culture are emphasized by most models. It is more important for the culture to be characterized by trust and openness than for communication to be open and boundaryless. Here, we see a focus on removing barriers that is characteristic of systems theory. By contrast, only a few aspects of structure are emphasized, again focused on removing obstacles and on facilitating knowledge creation, sharing, and learning.

A powerful evolving vision appears to be important, but not everyone must share it ("control"). Technology may be helpful but is not necessary. There is more consensus on the importance of technology that facilitates information sharing and dissemination than on the use of technology for learning (which may be seen as more controlling).

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The underemphasis on some of the "hows" may represent both the belief that there is not one best way and the belief in the need for a learning rather than a planning and management approach to change. It may also represent the philosophy that once barriers are removed, and knowledge creation and sharing are facilitated, human potential will unfold. Ideas about self-organizing systems may be supplanting planning theory and hence, the low scores for performance and change "management".

Because of the need to be flexible and adaptable to deal with rapid change and uncertainty, multiple, partially conflicting goals must be pursued. Since goals develop and change over time, notions of planning and alignment do not work well. Continual reshaping and clarifying of goals and values necessitate a fluid approach to the design, management and evaluation of change.

Conclusions and Future Directions

Models of the learning organization bring together perspectives on development and change in organizational systems that are not in themselves completely new, but are being reinterpreted in light of pressures to adapt more quickly and to innovate more creatively. The idea of a learning organization holds promise, but we need to know more to better implement it and to judge its impact. The state of existing knowledge and practice poses several challenges for theory and research that need to be addressed to achieve that promise.

First, we do not have a clear, empirical foundation for understanding systems-level learning. Theories in the literature about organizational learning come from different intellectual traditions. They offer competing understandings of how systems learn, but not much in the way of research-based insight into which perspectives offer sounder advice. Perhaps because organizational learning takes place at a total systems level, there is less empirical research that helps us to understand what happens when a large system learns.

Differences among models in their emphasis on individual, team, and organizational learning, and the failure of existing models to articulate relationships across levels, point to a second challenge--the need for better theory and research about how learning across levels is linked.

An area that is underemphasized in current models of learning organizations--their links to performance outcomes--poses another key challenge for theory. Future work needs to define the expected outcomes of systems-level learning and their links both to performance outcomes and to the facilitating organizational systems that create them.

In order to specify the links between facilitating organizational systems and the outcomes of systems-level learning, future work needs to clarify and integrate the theoretical bases of learning organization models. Areas of common ground uncovered in our analysis draw upon several established bodies of theory and research, including socio-technical systems, learning theory, innovation, and cooperative dynamics. By making the contribution of these theories more explicit, and by specifying the links between constructs in those theories and outcomes of systems-level learning, future work can develop the theoretical foundation for learning organization models which can serve as the basis for research designed to test key linkages and the effectiveness of interventions on them.

Our analysis also suggests that the concept of a learning organization may be inherently paradoxical. High performance learning organizations seem to be adept at balancing apparently opposing forces. Existing models of learning organizations have been formulated in the context of organizational realities that are often dysfunctional for learning and change. A challenge for future work is to define combinations of apparently contradictory elements that lead to the joint optimization of learning and performance.

A final challenge is the need for better tools to measure constructs and test links in our theory. Measurement is key to selecting and fine tuning interventions, as well as to determining which interventions will have the greatest benefit in taking us to our goals. Better measurement tools will enable us to begin tracing the impact that different interventions have on systems-level learning and performance.

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Leading and Managing in a Service Organization: An Examination of Line vs. Staff Effectiveness

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Presents an analysis of differences in managerial strengths and weaknesses between 45 line managers and 52 human resource professionals in a highly service-oriented retail organization. Based on data collected during a 360 degree development feedback effort on 46 behaviors pertaining to different aspects of management, findings revealed differences with respect to ratings levels, behavioral tendencies by line vs. staff position, and managerial self-awareness vis-à-vis ratings' congruence. Implications of these data are discussed.

Given the impact of individual managerial actions on service provider quality (e.g., Church, Javitch & Burke, 1995; Schneider, 1980) and subsequent organizational performance (e.g., Heskett, Jones, Loveman, Sasser, & Schlesinger, 1994; Spencer, 1991; Waclawski, 1996), as well as the ever increasing level of service-driven organizations in the marketplace today (Maister, 1993; Schneider & Bowen, 1993), it is imperative that we begin to understand the relative strengths and weaknesses of different managerial positions that enhance and reinforce these principles in the workplace.

While the behaviors of line managers have always been an easy target of study because their behavior directly impacts the work carried out in the field (e.g., Church, 1995a, Daniel, 1985), the contribution of staff positions to effective service performance has received considerably less examination in the literature (Bowen & Lawler, 1992; Schneider & Bowen, 1993). This is somewhat surprising, since it is primarily the staff functions, such as human resources and information systems functions, for example, that serve as the gateway to organizational information on culture, standards and policies. Given their role in the organization, one would expect that HR professionals would have to be more facilitative and process oriented in their approach to working with others than would managers with bottom-line authority and responsibility. While this differentiation in role is probably present in most organizations to some extent, it is likely to be more pronounced in highly competitive service-based organizations where profit margins are low and external competitiveness is high. Given these conditions, the tensions inherent in the system are likely to polarize people into various functional roles that highlight their respective strengths and weaknesses.

The purpose of this paper is to provide evidence of this polarization, and to delineate the differences between line and staff functions in a large, rapidly growing U.S. based highly service-oriented retail organization. More specifically, the relative strengths and weaknesses of a line versus a staff orientation will be compared and contrasted, with particular attention paid to the responsive and highly competitive nature of the service industry (Maister, 1993; Schneider, 1980) and the specific role of the human resources function in this arena (e.g., Hersey & Blanchard, 1988; Schneider & Bowen, 1993; Schuler & Jackson, 1987). In addition, some general comparisons among various rating sources vis-à-vis levels of agreement or concurrence will also be assessed and compared with prior research and in relation to various theories of self-awareness (e.g., Atwater & Yammarino, 1992; Church, 1997; Church & Waclawski, 1996; Harris & Schaubroeck, 1988; London & Wohlers, 1991; Van Velsor, Taylor & Leslie, 1993; Yammarino & Atwater, 1993). Recent research efforts with managers from a variety of organizations and industries (e.g., Atwater & Yammarino, 1992; Church, 1997; 1994; Van Velsor, Taylor, & Leslie,

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1993) have supported the contention that greater levels of managerial self-awareness--as measured by congruence in self-other ratings--all directly linked to higher levels of performance.

Thus, this paper will attempt to address issues inherent in functional differences, rating levels, and managerial self-awareness with respect to line versus staff positions. Finally, implications of these results for the management and assessment of service organizations will be discussed.

Method

The data used in the present study were collected over a 9 month period from managers, their direct reports, peers and supervisors as part of a larger 360 degree HRD feedback initiative devoted to enhancing and developing the individual effectiveness of managers in this organization. In total, responses were received from 97 focal managers (45 line managers and 52 human resource professionals), along with 515 of their direct reports, 609 of their peers, and 126 of their supervisors. Since the majority of the staff personnel did not have direct reports, they relied more heavily on peers for their feedback assessment. Listed below in Table 1 is the detailed response information for each functional group.

Table 1. Response Information by Functional Group

	Line Managers		Staff Personnel		Total	
	N	*M*	*N*	*M*	*N*	*M*
Direct Reports	466	10.13	49	6.13	515	9.54
Peers	243	5.28	366	7.04	609	6.21
Supervisors	55	1.22	71	1.37	126	1.30

All raters, including the participants themselves, were informed of the developmental intent of the rating process and how the feedback would be used. They were instructed to be as candid in their assessments as possible. Raters were also told that no one in the organization other than the focal manager himself or herself would receive a copy of the results of their assessments. Further, direct reports and peers were also notified that their ratings would not be reported to the participant unless 3 or more responses were received from the same perspective, thus insuring the confidentiality of their individual responses. These tactics were employed with the intent of enhancing rater motivation and reducing instrumentation effects inherent in the rating process (Harris, 1994; McIntyre, Smith, & Hassett, 1984; Ostroff, 1993).

The feedback process was initiated with the senior most officers of the organization. Following the receipt of their own individualized assessment, the rollout process included all senior VPs and managers, regional managers, and human resources personnel. Since the questionnaires used to assess regional managers and human resource staff were the same, it was possible to compare the collective results of individuals with these two different functional orientations.

Data were collected using a 46-item custom-designed behaviorally based instrument constructed in collaboration with the OD department of the client organization. This instrument consisted of factors identified by the organization as critical for managerial success. Areas assessed by the instrument included demonstrating various aspects of customer focus, leadership, building relationships, critical thinking, follow through, communication, integrity and people management. The inter-item reliability of the instrument was quite strong among the present sample with .92 for self-ratings, .97 for averaged direct reports ratings, .93 for averaged peer ratings, and .95 for supervisor ratings.

Analyses were conducted on these data using both total scale and individual item scores. Averaged other ratings by source (e.g., direct report, peer, supervisor) were used for those individuals with more than 1 direct report, peer or supervisor responding. Managerial self-awareness vis-à-vis self-other congruence was computed using two different methods: (a) the collective level of agreement between self and others' ratings using a standard index of profile similarity *d*, i.e., the square root of the sum of squared differences between self and other (averages were used for direct reports, peers and clients rating the same individual) for each comparison item divided by the total number of items (e.g., Church, 1997; Nunnally, 1978; Tisak & Smith, 1994); and the categorical agreement method (e.g., Atwater & Yammarino, 1992; Van Velsor, Taylor & Leslie, 1993) whereby participants are classified as being either under-raters, accurate-raters, or over-raters based on a comparison of total scores. Standard Pearson correlations were also performed for comparison purposes with prior research.

Results & Discussion

Findings are described according to three major categories: Summary Score Analyses, Functional Differences, and Managerial Self-Awareness.

Summary Score Analyses. First, an analysis of the summary scores by rater-type revealed that, as anticipated and consistent with prior research (e.g., Arnold & Davey, 1992; Church, 1994; Harris & Schaubroeck, 1988; Mabe & West, 1982; Nowack, 1992; Van Velsor et al., 1993), self-ratings were significantly higher overall than those provided by any other group. Thus, individuals tended to rate themselves higher on average across all 46 behaviors compared with ratings received from their direct reports ($t = 3.07$, $p < .01$), their peers ($t = 3.96$, $p < .001$) and their supervisors ($t = 3.38$, $p < .01$). Moreover, while self and direct report ratings were low but significantly correlated nonetheless, there were no significant relationships between self and peer or self and supervisor assessments. Although consistent with prior research, this is still a somewhat troubling finding. Table 2 provides the detailed descriptive statistics for these summary variables.

Table 2. Descriptive Statistics for Summary Ratings

	M	*SD*	*Self*	*Direct Reports*	*Peers*	*Supervisors*
Self	3.63	.37	.92			
Direct Reports	3.52	.34	.29*	.97		
Peers	3.46	.28	.13	.30*	.93	
Supervisors	3.45	.37	.01	.14	.22*	.95

Note: $p < .05$, reliabilities are printed on the diagonal

Functional Differences. Next, the data were examined more carefully for differences in ratings effects and specific content areas by functional group (i.e., line versus staff). Based on the results of several ANOVA models, a number of strong and interesting findings emerged, some of which served to moderate the general ratings discrepancies noted above. First, it was apparent that line managers rated themselves significantly higher than did staff managers ($M = 3.72$ vs. $M = 3.56$) $F = 4.51$, $p < .05$. When compared with others' ratings within their own functional group, line managers continued to yield significant over-inflated self-ratings as compared with ratings from their direct reports, peers and supervisors, while there were no significant differences between self-assessments from staff personnel and their direct reports, peers or supervisors. Thus, function served as a key moderator for the inflation observed in the self-ratings. While this does not necessarily reflect a greater level of self-awareness on the part of staff personnel, it would suggest that they are at the very least more modest in their self-assessments.

Another interesting difference observed in ratings by functional group concerned the average value given by peers. While there were no significant differences in direct report ratings (due in large part to the fewer numbers of direct reports responding for the staff personnel), line managers were found to be rated significantly lower by their peers than were staff personnel ($M = 3.39$ vs. $M = 3.52$) $F = 5.00$, $p < .05$. This tendency was also present among ratings received from supervisors ($M = 3.38$ vs. $M = 3.51$), although the effect was significant only at the $p < .10$ level.

Further analyses were then conducted at the item level in order to identify specific differences by functional group. Surprisingly, the majority of the differences identified were consistent across rater type except for self-assessments. In other words, direct reports, peers and supervisors were extremely consistent in their perceptions of the relative strengths and weaknesses of each group of individuals. A summary of significant findings from these analyses is provided below in Table 3.

Table 3. Key Strengths from Item Level Comparison by Functional Group

	Others' Ratings
Line Managers	+ understands how customers think
	+ reacts to customer needs
	+ handles upset customers
	+ is relentless in pursuing objectives
	+ willingly takes on significant challenges
	+ is flexible and adapts to change
	+ follows up with people to make sure the job gets done
Staff Personnel	+ understands impact of decisions on others
	+ creates a positive work environment
	+ creates partnership and teamwork
	+ looks for common ground to solve problems
	+ values diversity
	+ treats people fairly and consistently
	+ has the highest standards
	+ readily admits mistakes
	+ treats people with respect when times get tough
	+ listens with an open mind
	+ asks people for their input and ideas
	+ is approachable

Interestingly enough, the pattern of differences for self-ratings was entirely different. More specifically, while line managers saw themselves as being better at developing their people (e.g., training and developing their people, challenging people to learn and grow, giving people responsibility) direct reports, peers and supervisors did not agree.

Given the patterns described above, it is apparent that the polarization in function has occurred in the present organization. Using the framework of a traditional task-process dichotomy (e.g., Bales, 1950; Fiedler, 1964), the strengths of the line managers represent the task mentality for the organization--i.e., bottom-line, customer-driven, focused on getting the job done no matter what the cost. The managerial strengths of the staff personnel, on the other hand, represent the process side of the organization--i.e., people oriented, cooperative, collaborative, open to all types of people and ideas. This separation of managerial strength by function is not a particularly novel observation, and has been reflected in a variety of prior studies (e.g., Siegal, et al., 1996).

Although both aspects are clearly needed for effective functioning in organizations, such dichotomization is probably not best realized as a division of function (e.g., line versus staff) but rather as a distinction between different individuals within the same functions, or even as different aspects of managerial behavior within the same individual. In other words, while such polarization may be a consequence of extreme environmental pressures coupled with high speed growth, it is a potentially dangerous situation.

Clearly, this is justification enough for pursuing individual development efforts through the use of multi-rater feedback efforts. As many practitioners and researchers have argued, individualized multi-rater feedback is one of the most popular and effective methods for changing individual behavior (e.g., Bracken, 1994; Church, et al. 1995; Hazucha, Hezlett, & Schneider, 1993; London & Beatty, 1993; O'Reilly, 1994). When compared with self-ratings on the same items, ratings from co-workers and clients serve as a powerful tool for individual behavior change by enhancing one's level of self-awareness. By building on his or her strengths and weaknesses, a manager can begin to improve his or her behavior in a variety of actionable areas.

Managerial Self-Awareness. Finally, the data were examined for differences with respect to managerial self-awareness. Based on an analysis of the individual item-level differences, the only significant effect for the profile similarity measure (*d*) was for self-supervisor ratings. More specifically, line managers exhibited significantly less congruence between self-scores and those from their supervisors than did staff personnel ($M = 1.12$ vs. $M = .99$, $F = 8.17$, $p < .01$). With respect to self-direct reports and self-peers comparisons there were no significant effects by functional group. Levels of MSA among the present sample (e.g., $M = .88$, and .90) were similar to findings for average performing managers reported in prior research (e.g., Church, 1994).

When these same data were examined using the categorical approach (e.g., Atwater & Yammarino, 1992) to assessing self-awareness vis-à-vis ratings congruence, the same pattern emerged. Based on a comparison of self and peer ratings (due to sample limitations across the two groups) across the entire 46 item instrument, the subsequent analysis yielded a significant Chi-square value of 7.90, $p < .05$. Therefore, it is clear that staff personnel tended to be much more modest in their ratings overall than were line managers. Consistent with the item-level analysis, there were no differences in self-awareness among peers with respect to functional group. Table 4 presents the details of this analysis.

Table 4. Percentage of Functional Group by Agreement Category

Row Pct Col. Pct	Line Managers	Staff Personnel	Total
Under-raters	25.8% 17.8%	74.2% 44.2%	32.0%
Accurate raters	54.1% 44.4%	45.9% 32.7%	38.1%
Over-raters	58.6% 37.8%	41.4% 23.1%	29.9%
Total	46.4%	53.6%	100.0%

A similar categorical analysis based on supervisor ratings yielded consistent results with the item level analysis, that is, a significantly greater proportion of line personnel were accurate raters (i.e., more self-aware) than were line managers with a Chi-square of 13.72, $p < .001$.

Summary

In general the results reported in this paper point to a number of clear differences between line and staff positions with respect to levels of self-assessment as well as strengths and weaknesses as managers. More specifically, while data collected from line managers reflected the same general tendencies toward self-ratings bias reported in many other research studies, staff personnel provided much more modest and accurate self-assessments, thus demonstrating greater managerial self-awareness. Further, while line managers were seen as being strong at bottom-line, task and customer oriented behaviors, they were particularly weak in the areas of communication, demonstrating integrity and generally managing their people. In comparison, staff personnel were seen as being far better at working with and relating to others on an interpersonal level, but they were less effective at providing follow-through and less demonstrative toward the customer.

Limitations & Suggestions for Future Research

There are several limitations to this research that limit the generalizability of the results presented. First, only one organization was studied. While this specific organization does represent one of the most successful service-based retail firms in the United States at present and therefore may reflect those organizations that experience significant growth, it does not represent the large percentage of firms that either stagnate or even fail. Future research should focus on testing the differences exhibited here across a variety of successful and not so successful service-based organizations. It may be the case, for example, that those companies experiencing only moderate amounts of growth may have better integration between the task and process functions. Research by Church and McMahan (1996) on the practice of OD in rapidly growing firms does suggest that the OD/HRD function is less viable (and given less focus) in these organizations than in those with more established functional structures (e.g., McMahan & Woodman, 1992).

Another limitation of this research is the specific nature and size of the samples studied. Although the entire population of regional managers and HR professionals were used for this research, differences in other groups (e.g., senior managers, sales staff, local area managers, etc.) that were not studied might serve to either enhance or refute patterns observed. Future research should be directed at assessing and ultimately comparing the same set of behaviors a variety of different functions. While it is likely that senior managers in such an organization would tend to exhibit the same types of strengths and weakness, given the impact that such key organizational members can have on the culture and resulting managerial behavior (e.g., Church, 1995a; Church & Waclawski, 1996), this can be only be confirmed through additional study.

Finally, the results described above would be more meaningful if they could be linked directly to hard performance measures. Prior research, for example, has linked specific managerial behaviors to net profit and customer service measures in the financial (Waclawski, 1996) and in the airline service industries (e.g., Church, 1995b).

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Leadership Throughout Organizations

Darlene Russ-Eft
Zenger Miller

This study validates measurement of the CLIMB leadership model. A 36-item instrument was completed by 129 non-supervisory personnel from 10 different organizations. Analyses of the 36-item and a shortened version of 30 items revealed high internal consistency emerged, with an overall alpha of .89 for the 36-item version and .86 for the 30-item version.. A principal components factor analysis of both versions showed that five factors accounted for 50.4% and 43.8% of the variance, respectively. Furthermore, factor analyses of items (on the 30-item instrument) from the five pre-determined factors revealed that each factor emerged as unitary.

Leadership has always been essential to human society. No human organization can survive long without it. In every culture and every historical period, leadership has played a vital role in the coherence and survival of the group. This universal need for leadership derives from the uncertainties and dangers inherent in the human condition. Day-by-day, moment-by-moment, all people experience the need to know what to think, feel, and do. In familiar situations, decisions are easy. But when conditions become confusing, uncertain, or dangerous, the choices are less clear. People instinctively look to leaders for help. Leaders provide models for how to act, think, and react. They can help group members uncover new possibilities within a situation and untapped resources within themselves.

In corporations across North America, real leadership has traditionally been confined to the upper echelons of the organization. The roots of this practice lie in the theories of Frederick S. Taylor (1911), an American engineer and efficiency expert. Taylor sought to optimize industrial efficiency by performing time-and-motion analyses on each industrial task. Each task was broken down into discrete actions and then reconfigured, so that workers could perform those tasks in the fastest and most efficient way possible. By mechanizing human labor -- having each worker on the assembly line perform only a few specialized actions -- Taylor sought to compensate for the overall lack of skills in the labor force. Along with this mechanization of labor came a sort of mechanization of management: an extensive management structure to organize and supervise employees. The idea was to minimize individual responsibility in order to maintain an efficient and uniform manufacturing process.

In an economic environment increasingly shaped by the globalization of competition, deregulation, the maturation of markets, and breathtaking rate of technological development, this kind of structure has proven unwieldy. Bending to the need to introduce new, high quality products and services quickly, many corporations have moved toward flatter organizational structures that emphasize participative management and teamwork on the part of multi-skilled employees. Individual contributors in team-based environments are taking on more and more responsibility for improving processes and products. As executives and managers find themselves sharing more of the decision-making authority with individual contributors, an emerging consensus sees a need for leadership at all levels of the organization.

Popular books on management and business claim that effective leadership throughout an organization is now essential. Kotter (1988) stresses "the need for effective leadership at the lower levels of the hierarchy." Champy (1995) points out that the trend toward the reengineering and flattening of organizations requires all employees of an organization to participate in leadership.

While there is growing consensus on the need for everyone to exercise leadership, there is still little agreement on what, precisely, leadership is. Block (1993) proposes replacing the "command and control" hierarchies with collaborative leadership arrangements in which both decision-making power and accountability are shared between managers and individual contributors. His concept of leadership rejects common notions of defining purpose for others, controlling others, or taking care of others. Champy seeks

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to recast the traditional manager as a "liberation leader," a leader who can "let go," who enables employees to get work done by providing support, removing obstacles, and challenging their imaginations. Carnevale (1990) describes leadership as a "delicately sculpted image" built upon attributes such as reliability, goal orientation, vision, and the ability to cultivate the respect of peers. To be effective, a leader must couple these skills with what Carnevale calls "organizational effectiveness," an understanding of the goals, values, and cultures of organizations and how to operate within them.

If the need for leadership is great, the need to identify and articulate the skills and attributes that make up effective leadership is also great. A review of the research literature on leadership and leader competencies was undertaken in hopes of discovering a set of characteristics common to the competing models and definitions.

Russ-Eft, Berrey, Hurson, and Brennan (1996) analyzed over one hundred leadership studies conducted during the 1980s and early 1990s in an attempt to identify the common attributes of good leadership. The only characteristic found to be universal in these reports was "vision." Effective leaders help to establish a vision, set standards for performance, and create a focus and a direction for organizational efforts.

Three other characteristics appeared repeatedly:

- Ability to communicate a vision effectively (often through the use of symbols and symbolic actions)
- Commitment to and passion for the organization, and the ability to communicate that to others
- Ability to inspire trust and build relationships

Beyond these four characteristics, the consensus breaks down. Each study provides a long list of attributes associated with effective risk-taking (e.g., flexibility, self-confidence, interpersonal skills, task competence, intelligence, decisiveness, understanding followers, courage, and so on) but none of these attributes are identified by more than two of the studies.

In addition to leadership surveys, general competency studies -- studies aimed at determining the basic skills and competencies employers look for in employees -- were also reviewed. From 1984 through 1991, five major studies of workforce skills were commissioned: the U.S. Department of Labor (SCANS, 1991), the American Society of Training and Development (ASTD) (Carnevale, Gainer, & Meltzer, 1990), the Michigan Employability Skills Task Force (Employability Skills Task Force, 1988, 1989; Mehrens, 1989), the New York State Education Department (1990), and the National Academy of Sciences (NAS) (1984). Three of these studies, SCANS, ASTD, and Michigan, identified leadership skills as an important category of interpersonal or teamwork skills. Each of the three studies, however, defined leadership skills differently. SCANS emphasized persuasion, while the Michigan study emphasized the capacity to "know when to be a leader and when to be a follower." The ASTD study focused on "sharing leadership," which was closely associated with interpersonal skills, teamwork, and negotiation.

While each of the previous studies has shed some badly needed light on issues surrounding leadership, as a group they display a surprising lack of consensus on which characteristics of leadership are fundamentally important. Each study defines leadership differently. Each model develops its own categories of leadership characteristics or competencies; only rarely do these overlap. Significantly, none of the studies has queried or focused on individual contributors -- those outside of traditional management roles. Most of these studies surveyed only senior management, while others concentrated on or included middle and line managers.

Consequently, none of these studies gives us a true picture of the leadership characteristics needed currently at all levels of an organization. What, for instance, are the leadership qualities an individual contributor or team member will need when co-workers look to him or her for guidance on a certain issue? Clearly, as organizations grow increasingly flatter and more streamlined, a different kind of leadership model is needed. Russ-Eft et al. (1996) reported on the results of a critical incident study that resulted in the identification of leadership competencies at all levels in an organization. From these competencies, we developed the CLIMB model of leadership:

Create a compelling future
Let the customer drive the organization
Involve every mind
Manage work horizontally
Build personal credibility

Hurson (1996) reported on the success of the use of the CLIMB model with senior executives. Russ-Eft (in preparation) presented results of analyses of the reliability and validity of measures of the CLIMB concepts with senior executives.

Research Questions

The purpose of the present study is to validate an instrument designed to measure the CLIMB leadership competencies among those who are not currently in traditional leadership positions. Such validation will provide further evidence of such leadership as well as data on an instrument to measure such leadership.

Method

Instrument. The instrument was developed using the results of the critical incident study (Russ-Eft, et al, 1996). It was designed to measure the leadership competencies of non-supervisory, professional/technical employees using the CLIMB model. It included 36 items, and each item was scored using a 5-point Likert-type scale. The scale ranged from 1 to 5, with 1 representing "Strongly Disagree" and 5 representing "Strongly Agree."

Subjects. The subjects came from 10 different organizations, representing manufacturing, food processing, financial services, business services, educational services, and health services. All 129 subjects came from non-supervisory, professional/technical positions.

Procedures. A contact within each organization was telephoned and asked to distribute questionnaires. Each subject received a questionnaire and a self-addressed stamped envelope for returning the questionnaire.

Analyses. Cronbach's Alpha was calculated to determine internal consistency. An alpha "if item deleted" was calculated to determine the effect on the alpha if any items were deleted from the scale. This was followed by a principal-components factor analysis with varimax rotation. Using the results of the alpha "if item deleted" and the factor analysis, the instrument was reduced to 30 items, and the analyses rerun.

Results and Conclusions

The overall alpha and item alphas revealed a high degree of internal consistency. The overall alpha was .8954. The item alphas using "if item deleted" yielded alphas ranging from .8896 to .8961.

A principal components factor analysis using all 36 items, followed by a varimax rotation was undertaken. Using Kaiser's criterion, according to which only factors with eigenvalues greater than 1.0 are retained, the analysis retained 10 factors which accounted for 55.6 percent of the variance. The scree-plot of the eigenvalues and factors, shown in Figure 1, indicated that five factors should be retained. These five factors accounted for 50.4 percent of the variance.

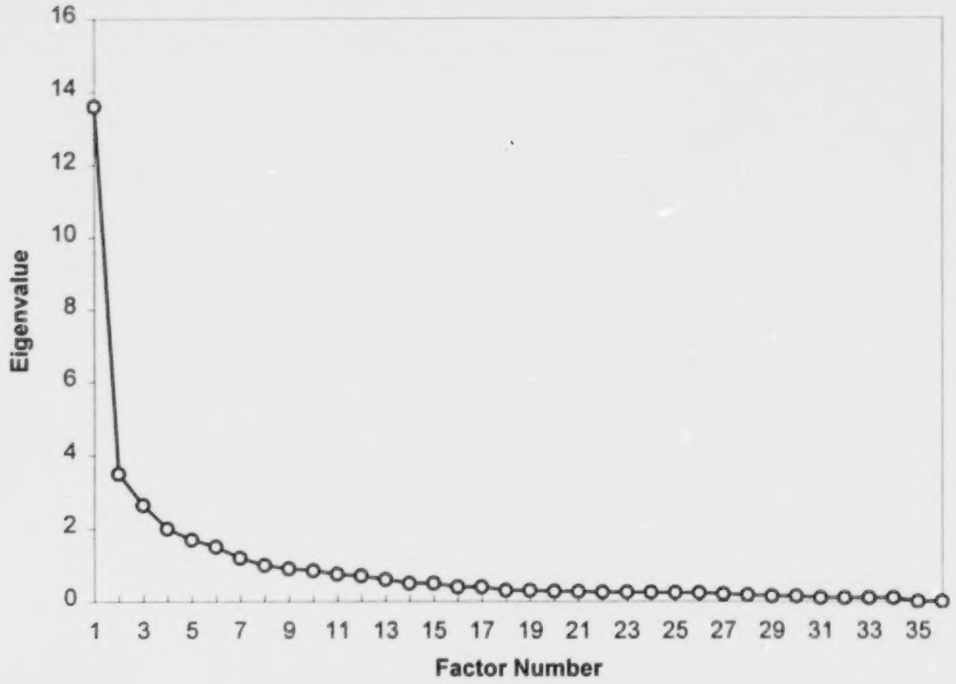

Figure 1. Scree plot of the eigenvalues for the factors using the 36-item instrument measuring CLIMB.

The items loadings from the varimax rotation suggested that Factor 1 represented "Create a compelling future", Factor 2 represented "Build personal credibility," Factor 3 represented "Manage work horizontally," Factor 4 represented "Let the customer drive the organization" and Factor 5 represented "Involve every mind." Table 1 presents a brief summary of the factor analyses on the agreement ratings, using varimax rotation. These results indicate that the factor structure of the instrument and the CLIMB model are congruent.

An examination of the loadings of specific items on each factor revealed that several items cross-loaded or showed high loadings on more than one factor. As a result, further review of the items was undertaken to determine whether the instrument could be refined.

Table 1

Factor Analysis Results of 36-Item Instrument Including Factor Loadings (By Factor Using Example Items)

Factors	**Non-Supervisory**
Factor: **Create a Compelling Future**	
I help others develop positive approaches to emerging needs in the organization.	.70
Factor: **Let the Customer Drive the Organization**	
I help ensure that timely, accurate customer data is gathered and distributed.	.73
Factor: **Involve Every Mind**	
I encourage people to speak up when they disagree.	.52
Factor: **Manage Work Horizontally**	
I challenge unnecessary barriers (policies, procedures) to working across functions.	.78
Factor: **Build Personal Credibility**	
I actively seek feedback regarding my strengths and weaknesses.	.79

Based on the combined results of the Cronbach alphas and the factor analyses, six items were deleted and the analyses rerun. With only 30 items, the overall alpha was .8643, and the item alphas "if item deleted" ranged from .8555 to .8662. Table 2 presents a brief summary of the factor analyses on the agreement ratings, using varimax rotation. The five factors accounted for 43.8 percent of the variance. A final set of factor analyses examined separate items from each of the pre-determined factors; these analyses showed that each factor emerged as unitary.

Table 2

Factor Analysis Results of 30-Item Instrument Including Factor Loadings (By Factor Using Example Items)

Factors	**Non-Supervisory**
Factor: Create a Compelling Future	
I help others develop positive approaches to emerging needs in the organization.	.66
Factor: Let the Customer Drive the Organization	
I help ensure that timely, accurate customer data is gathered and distributed.	.70
Factor: Involve Every Mind	
I encourage people to speak up when they disagree.	.77
Factor: Manage Work Horizontally	
I challenge unnecessary barriers (policies, procedures) to working across functions.	.72
Factor: Build Personal Credibility	
I actively seek feedback regarding my strengths and weaknesses.	.75

These results supported the congruence of the shortened-version of the instrument and the CLIMB model. In addition, they provided some evidence supporting the CLIMB model of leadership for non-supervisory personnel. Further data collection currently underway will yield more stability to these findings.

How This Research Contributes to New Knowledge in HRD

The combination of the Russ-Eft et al (1996) critical incident study and the Russ-Eft (in-press) study of senior executives with the results of the present study provides evidence for the construct validity of the CLIMB model of leadership. Of greatest interest is that such validation extends to those who are not currently in formal leadership positions.

Organizations today are increasingly disbanding hierarchies and organizing around processes in order to become more customer focused and competitive. In such environments, leadership practiced at all levels will provide a great competitive asset. These results provide some evidence of the extension of leadership to all levels in organizations.

If leadership exists at all levels, then we can assume that leadership development is needed at all levels within organizations. Indeed, the need for such leadership development may be even greater than that needed for executives. Once an individual reaches the executive level, he or she has most likely participated in some formal or informal leadership development. Individuals at other levels within organizations have probably never been exposed to such leadership development. Thus, the role of HRD will be to expand leadership development to everyone and to make that development appropriate for all levels within organizations.

The discussion of leadership at all levels has focused on the positive aspects. There may be some negative aspects, however, particularly when the concept applied inappropriately. As one example, the move within healthcare toward the health-maintenance organizations (HMOs) has led to a focus on profitability. In some instances, the tasks of healthcare professionals have been segmented and designed for technicians. Such technicians have not necessarily received the same level of training and development as the healthcare professional. Furthermore, unlike the professional, the technician may not be accountable for his or her actions to some third-party professional association (i.e., the American Medical Association). The role of the HRD professional, in this case, may be to alert the organization to potential pitfalls arising from cost-cutting actions that may compromise expected quality and standards and lead to future problems for the organization.

The expansion of the leadership concept to all levels within organizations provides further opportunities for researchers. To what extent are organizations actually embracing such concepts? To what extent are organizations using the concepts inappropriately? If organizations are implementing this concept, what changes are occurring, if any, in the reporting relationships and the bureaucratic structures? If such changes are taking place, how are customers reacting? To what extent do such changes improve the productivity and profitability of the organization? From the standpoint of HRD, how are organizations developing these leaders at different levels; and how effective are these development efforts?

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The Development and Evaluation of a Model of Responsible Leadership for Performance: Beginning the Journey

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The model for "Responsible Leadership for Performance" represents a unique perspective on sustainable leadership. The core contribution of this effort is the integration of the "personal characteristics" view of leaders at the top and the "performance/systems view" of the complexity of the organization, along with the recognition that leadership requires willing followership.

Theoretical Framework, Problem Statement, and Research Questions

With executive salaries and compensation raised to astronomical heights, their less fortunate workforces have developed extreme cynicism in response to upper management's betrayal of trust (Lee, 1997). Workers "...do not understand why these things are going on. Leadership has failed to make the case, which fuels anger and frustration" (Lee, 1997, p. 35).

The paradox of what seems to be happening in the realm of leadership is that greed and self-interest among top executives (Swanson, 1996) is contrasted against the calls for these same people at the top of organizations to view themselves as servant-leaders (Block, 1993). Much of the leadership development response is focused on the strength and characteristics of the individual leader rather than looking at leadership needing to take place at multiple levels in an integrated way. Covey's popular leadership model is an example of this self-centered view of leadership that never directly deals with performance and followership (1989). How to integrate the performance demands and the realities of humanity is a challenge to those interested in leadership. The field of HRD should have something to say in response to the uni-dimensional leader-at-the top, short-term economic view of leadership driven by Wall Street.

The problem is the need for a leadership model for responsible leadership in a framework that satisfies the concerns for performance *and* integrity. The model must integrate the practical overarching concerns for ethics and economics. The following research questions have been developed to guide the study:

1. Can a model for "Responsible Leadership for Performance" be developed from the literature?
2. Does the model of "Responsible Leadership for Performance" have content and face validity among responsible leaders and followers?

Methodology

The following research methodology was used to pursue the research questions. Question 1, focused on developing the model of "Responsible Leadership for Performance," and was addressed and documented through the literature, logic, and systems thinking. The model relies heavily on the leadership work of Bell (1993)-- effective, ethical, and enduring leadership-- and the performance improvement work of Swanson (1994) stressing performance levels and performance variables.

Question 2 focused on determining the content and face validity of the model of "Responsible Leadership for Performance" and was addressed through the expert critique of the model by responsible leaders and responsible followers.

Question #1 Results: Developing the Model of the Responsible Leadership for Performance

Question 1 focused on developing the model of "Responsible Leadership for Performance," addressed through the literature, logic, and systems thinking. As noted earlier, the model relies

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heavily on the leadership work of Bell (1993) -- effective, ethical, and enduring leadership, and the performance improvement work of Swanson (1994) -- performance levels and performance variables (see Figure 1).

Literature Overview. There are many changes afoot as the realities of an emerging era of globalization and the accompanying relentlessness of discontinuous change in a complex, turbulent business environment become the order of the business day. These changes call for leadership models that pursue performance in ways that are open, systemic, flexible, and holistic, and that enable organizations to continuously transform themselves.

From Rifken to Handy, Drucker to Barker, Toffler to McLagan and Nel, the unpredictability and even unimaginability, of the changes appear to point to the need for leadership that will be of a fundamentally different nature. The tension between the likely leadership needs of this emerging business era and the current state of leadership solutions are illustrated in the following points:

- Leadership remains a dilemma in organizations. A paradox within the realm of leadership is that of the prevalence of greed and self-interest among top executives (Swanson, 1996) and the need to contrast this against the calls for these same people to view themselves as servant-leaders (Block, 1993).
- There is increasing pressure to exhibit leadership within organizations, and yet there appears to be little evidence of leadership development contributing to organization performance. If leadership is within the realm of HRD, then it needs to add value to the performance of organizations, and the business case for leadership development needs to be made from a performance perspective.
- The increasing complexity and diversity of the business environment poses problems that leadership needs to be equipped to address in a holistic way, instead of offering partial solutions which seem to represent present day leadership.
- Many of the solutions and models of leadership available to us today have grown up in an era of a more stable, predictable environment of the Industrial Age. As such, they are ill-equipped to deal with the problems and challenges of the emerging era and the business environment of the information and participation age (McLagan & Nel, 1996). New, more holistic models of leadership are required to address these unique challenges.
- There are a number of areas of increasing difficulty for organizational leadership (Van der Merwe, 1996): "the increasing rate of change ... necessitating that organizations build an infrastructure for learning and the capacity to self-correct; ... a rising level of complexity, demanding a raising of the quality level of thinking systematically; and an ever-widening range of diversity, requiring an increasing ability to deal with diversity of thinking".

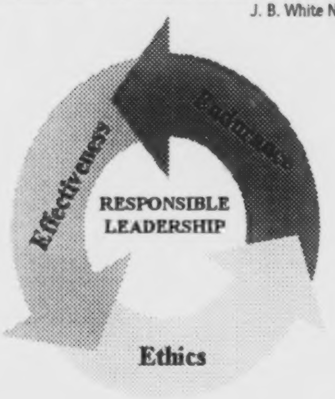
Gone are the days of prescriptive recipes of leadership. Organizations will need leadership that is able to think and act fundamentally differently, able to integrate critical thinking with critical practice. Organizations will need to shift away from the pursuit of control, discrete boundaries and recognizable problems towards greater complexity, global competition, continuous quantum change and collaborative team orientations. These shifts herald an increasing gap between current leadership practices and future leadership needs. The competencies needed of and for leadership will be different. They will need to integrate the apparent paradox of performance demands and the realities of humanity--- in other words, of people *and* performance (Melrose, 1996). How these emerging challenges can be met remains a question for the future. That they will take leadership of a fundamentally different nature and capability is certain. Some of the truisms of this leadership will very likely need to include the following:

- The reciprocity between leadership and followership are acknowledged.
- Leadership is constantly earned and re-earned.
- Leadership is about successfully straddling dilemmas - less about choices.
- Leadership demonstrates proof of business utility, both quantitatively and qualitatively - a utility that enables performance and adds value at the organizational, individual, group, and work process levels (Swanson, 1994).
- Leadership enables community; things of individual and the collective simultaneously.
- The possible outcomes and applications of leadership are acknowledged to be of both a "good" and "bad," or exploitative, nature (Swanson, Horton, & Kelly, 1986).
- Leadership is not seen to be synonymous with management, but rather is aimed more at "changing a system" with management aimed at "maintaining a system," each requiring different capabilities (Kotter, 1990, 1997; Swanson, 1994).

Building a Model of Responsible Leadership for Performance (RLP)

A. THE 3 E's OF RESPONSIBLE LEADERSHIP

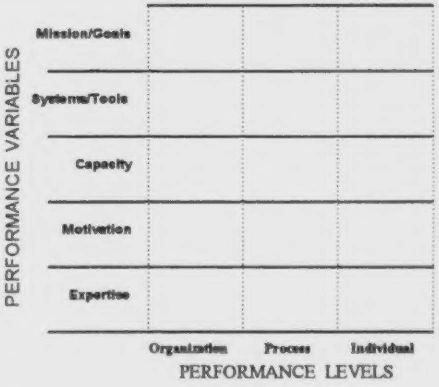
J. B. White Newman, 1989


Endurance
Effectiveness
RESPONSIBLE LEADERSHIP
Ethics

+

B. PERFORMANCE DIAGNOSTIC MATRIX

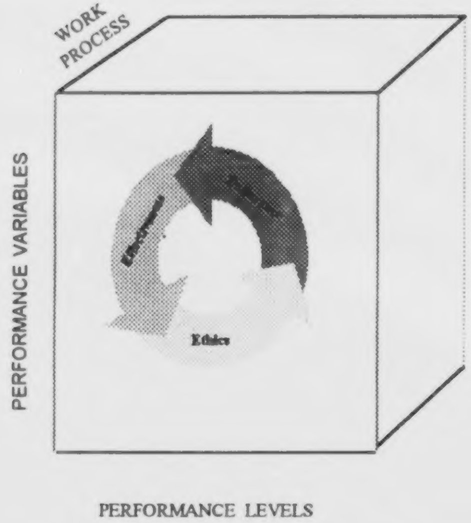
R. A. Swanson, 1994


PERFORMANCE VARIABLES
Mission/Goals
Systems/Tools
Capacity
Motivation
Expertise
Organization
Process
Individual
PERFORMANCE LEVELS

+

C. CONCEPTUAL FRAMEWORK FOR RLP

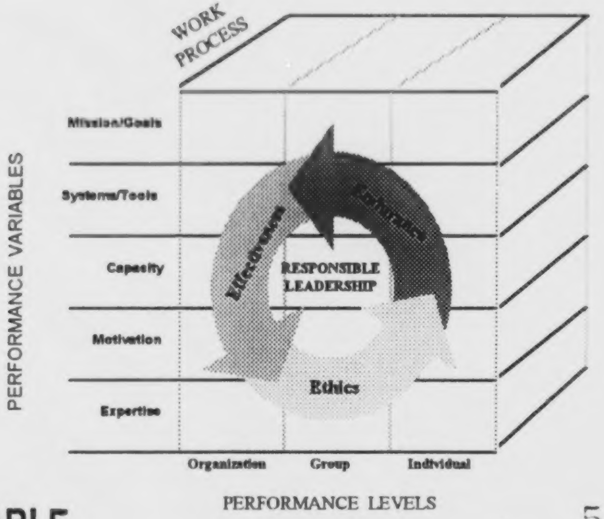
S. A. Lynham, 1997


WORK PROCESS
PERFORMANCE VARIABLES
Endurance
Effectiveness
Ethics
PERFORMANCE LEVELS

=

D. RESPONSIBLE LEADERSHIP FOR PERFORMANCE

S. A. Lynham, 1997


WORK PROCESS
PERFORMANCE VARIABLES
Mission/Goals
Systems/Tools
Capacity
Motivation
Expertise
Endurance
Effectiveness
RESPONSIBLE LEADERSHIP
Ethics
Organization
Group
Individual
PERFORMANCE LEVELS

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- Leadership in organizations is acknowledged as a privilege extended by many constituents at various levels within the organization, and, as such, requires the need to continuously be re-earned.
- Self-knowledge is accepted as a core tenet of Responsible Leadership, questioning whether one can "know others" without "knowing oneself," a recognition that leadership begins from within.
- Responsible Leadership reflects effectiveness, ethics and endurance and clearly demonstrating these, both qualitatively and quantitatively, towards performance and people.
- Responsible Leadership is recognized to be as much enabled by responsible followership as visa versa. Followership needs to reflect effectiveness, ethics and endurance. To be a responsible leader also requires knowing how to be a responsible follower.
- Leadership is acknowledged to require both learning and unlearning, and involves the active pursuit of lifelong learning.
- Leadership may also be about love - mostly of and for people (DePree, 1990; Lynham, 1992).
- Leadership is not seen to be something "handed down from above," rather that it needs to be earned continuously and usually from multiple places/sources (e.g., constituents).
- Leadership is acknowledged to be more about enablement than empowerment because empowerment comes from within and cannot be 'bestowed' by one upon another.
- It is accepted that leadership sometimes requires "walking out on the plank, alone;" taking steps to places where others are hesitant to venture on their own. Thus, courage and loneliness are common realities of Responsible Leadership.

Core Elements from the Literature. Leadership of the past and today commonly focuses on effectiveness, on getting things done, on producing economic results, a focus that is strongly fueled by the uni-dimensional, short-term economic viewpoint of leadership driven by Wall street (Swanson, 1994). However, leadership, particularly Responsible Leadership, is more than just economic results. (see section A of Figure 1).

The Webster II Riverside University Dictionary (1994) describes the word "responsible" to mean the following:

> 1. Being legally or ethically accountable for the welfare or care of another. 2. Involving personal accountability or ability to act free from guidance or higher authority. 3. Being a source or cause. 4. Capable of making moral or rational decisions on one's own, thereby being answerable for one's behavior. 5. Capable of being trusted or depended on: reliable. 6. Based on or marked by good judgment. 7. Having the means to pay debts or meet obligations. 8. Required to render account: answerable.

From the above definitions of "responsible," it clear that the word involves more than just meeting uni-dimensionally goals. It involves things of ethics and reliability, of being answerable for one's actions and deeds. Responsible Leadership, too, must attend to more than just effectiveness-- it needs to go beyond just meeting short-term economic goals.

White Newman (1989) offers a very workable and appealing framework for Responsible Leadership, a framework that consists of 3Es, namely, effectiveness, ethics and endurance. Too often, says Newman, leadership writings and practice have emphasized how to be effective. They need to embrace much more than this singular focus:

> Being solely concerned with effect seems inadequate, potentially even dangerous, since it is obvious that a person can be effective -- that is, make a difference -- yet also be unethical. Knowing the harm such people can cause, I believe most of us want leaders who, because they are ethical, will make beneficial differences to the world.

Conversely, many good people just cannot get things done; they do not make a difference. They are ethical, but ineffectual. The premise is that most of us want to follow a good person who can convert ethical ideas into viable actions.

Too often, in these stressful times, individuals who are effective and ethical survive as leaders for only a brief time. They do not endure. Some are replaced by external factors. Others cave in or burn out under the pressure of leadership. It seems irrational to advocate using up leadership, or self-immolation, as a way to serve a cause. Thus, endurance becomes essential to leadership. Endurance encompasses refreshment for leaders and renewal for their groups. The further assumption is that most of us wish to follow, and/or be, enduring leaders.

Being effective, ethical and enduring as a leader is the 3Es model. They can be thought of as three poles for constructing a teepee and providing a common framework. An individual then builds a unique structure around each.

How can this be done? Each individual can wrap this framework around their ideal image of good leadership by responding to three questions.

1. What practices help me to be an effective leader?
2. What habits prepare me to be an ethical leader?
3. What resources allow me to be an enduring leader?"

(Julie Belle White Newman, 1993)

In a study conducted by Lynham (1992) the above framework was used to identify leadership practices relating to the 3Es perceived by leadership and followership to be most necessary to help sustain business organizations in South Africa through the 1992-1997 period of change. Table 1 provides an example of how this framework can be used by leadership and followership to indulge their ideal image of Responsible Leadership, and what the practices of each E may need to look like to achieve this purpose.

Table 1: Practices of Effectiveness, Ethics and Endurance perceived by leadership and followership to be necessary for Leadership to be considered Responsible and most likely to sustain South African business through the changes of the 1993-1998 business period (Lynham, 1992):

EFFECTIVENESS	ETHICS	ENDURANCE
1. Serving the reciprocity and partnership between leadership and followership.	1. Serving as a symbol.	1. Reflecting wellness, wholeness and balance.
2. Demonstrating through example.	2. Resonating the needs and feelings of one's constituents.	2. Embodying both a willingness and an ability to change.
3. Focusing beyond just the immediate environment.	3. Doing things right.	3. Embracing vision, goals, and values that evoke lastingness.
4. Sharing, inspiring and safe-guarding mission, vision and direction.	4. Nurturing differences and nurturing the larger environment.	4. Nurturing balance and reciprocity between leadership and followership.
5. Inspiriting change.	5. Embracing a sense of inner truth and higher purpose.	5. Showing toughness and courage..
6. Making decisions, appropriately.	6. Possessing toughness, courage, balance, and touch.	6. Pursuing learning.
7. Nurturing a climate of motivation and learning.	7. Holding a deep sense of commitment to and belief in people.	7. Evoking effectiveness and ethics.
8. Engaging movement and goal achievement.		

Performance - a necessary focus of leadership. According to Swanson (1994), "as the role of performance improvement in organizations increasingly takes on strategic proportions ... executives are increasingly being held more accountable in this arena" (p. 3). In the context of an increasingly volatile and complex environment, Swanson advocates that single-dimension views of organizations and organizational performance be replaced by a systems view. This view, he believes, is more inclusive and helps achieve strategic benefits by "applying systems solutions to systems problems and opportunities" (p. 13). In other words, approaching performance from a systems view will ensure more integrated, connected and sustainable solutions/interventions; solutions that will pursue transformation at multi-levels of performance, making it more likely that they will be adopted and "stick". (see section B of Figure 1).

Swanson's "Performance Diagnostic Matrix" advocates the application of a series of questions geared to keep the inquirer open to performance possibilities and outcomes and to not come to a conclusion on this issue too quickly. This Matrix enables one to review the performance issue from two key but interrelated perspectives, namely, "level of performance and type of performance issue" (p.46). It thus provides a powerful tool for identifying and diagnosing performance, as well as enabling its user to quickly spot disconnects and mis-alignments among and between the levels and variables of performance. By "putting on" the Performance Diagnosis Matrix, we have been provided a powerful three-dimensional systems lens for not only diagnosing, but also for understanding, performance.

Development of the Model of Responsible Leadership for Performance

Initial Model. For leadership to be responsible it must add value to the whole organizational system. It must attend to the multiplicity of performance variables and pursue the increase and integration of performance at all the core levels, as indicated by Swanson in the Performance Diagnostic Matrix (1994).

Leadership and leadership development efforts are often aimed at only one of the levels of performance resulting at best in a uni-dimensional, disconnected transformation. It is the task of Responsible Leadership to not only optimize the interaction of each of the performance variables at each level of performance, but to also coordinate the whole matrix and inter-relationships among the performance variables and performance levels. In other words, Responsible Leadership will pursue optimization and transformation of performance at all three levels of performance through a simultaneous coordination of the cells within the Matrix and of the Matrix as an integrated whole.

Leadership is needed that can deal with the complexity of performance issues in a systemic and systematic way. Responsible Leadership for Performance becomes the articulation of the models of responsibility and performance (see section C of Figure 1).

A Model of Responsible Leadership for Performance. Four performance questions for Responsible Leadership are taken from the performance question refrain posed by Swanson (1994):

1. Will the organization perform better?
2. Will the work processes perform better?
3. Will each group perform better?
4. Will individuals perform better?

To become performance-driven requires business-level thinking (p.2). The Matrix is a practical tool for understanding and diagnosing performance. It guides the analyst to core disconnects from performance. Understanding the interaction of the three levels is a must, and being able to explain and understand the five variables of performance and that they interact, too, is a prerequisite.

For the purpose of highlighting the role of an enduring leader-analyst, it is believed that a deep understanding of work processes is required within and between the various cells. Thus, the work process dimension is pulled out and illustrated as the depth of each cell, and the old space in the performance matrix is replaced with group level performance. The work process dimension is focused on the definition, documentation, effectiveness, and efficiency of core and major business processes.

Through this multi-dimensional view of organizations, strategic benefits are achieved by applying systems solutions to systems problems and opportunities. System theory informs us that partial solutions do not work. Solutions must work at all three/four levels of performance. Systems-oriented analysts know that focusing activities and programs on the wrong targets is a waste of organizational resources.

Leadership that models and enables this systems-orientation along with the framework of the 3Es of Responsible Leadership is what is required of durable leadership. Not only must Responsible Leadership focus on the multiple levels of performance, but it must do so in an effective, ethical and enduring way to achieve sustainable performance it needs to balance all three E's at all four levels of performance.

Performance occurs in multiple arenas: Organizational, group, and individual, and for each of these there are distinguishable work processes. For example, setting goals and mission at the organizational level of performance involves a specific process, which is different from doing the same at the group or individual levels. (see section D of Figure 1).

Question #2 Results: The Validity of the Model of Responsible Leadership for Performance

Question 2 focused on determining the content and face validity of the model of "Responsible Leadership for Performance," and was addressed through the expert critique of the model by responsible leaders and responsible followers.

Face Validity. After reviewing the model and providing their review feedback to the authors, a final question concerning the model's face validity was posed to the experts. Each of the four expert reviewers confirmed the face validity of the model. To them the RLP Model made sense.

Their general acceptance that the model made sense is different, however, than having questions about the total completeness, accuracy, or how to implement the model. Several of their insights concerning the model's *content* validity follow.

A Content Validity Review of the RLP Model. Of the four reviewers approached, one was a CEO, one a high level regional manager and the other a senior consultant. Three were from the same company which has been a member of the Forbes Best Small 200 Companies in the USA for the past four years. The first is from a small management consulting firm with a specialization of working with management leadership teams. Their feedback, in terms of perceived strengths and weaknesses, are presented, in brief, below:

Perceived Strengths of the RLP model

- the integrated, multi-dimensional performance focus of the model makes more sense than most other models having worked with, the latter which seem to focus on singular levels of performance (the individual level of performance).
- the emphasis on the need for different skill and capabilities when involved with "maintaining a system" as opposed to "changing a system". This is a workable way of making sense of the difference between management and leadership, and the responsibility to first truly understand the way a system works now before changing it.
- that the model supports the foundations of HRD and demonstrates a soundness in economics, systems and psychology, and appears to be based on grounded theory.
- that a sound and tested Performance Diagnostic Matrix (Swanson, 1994) is advocated to first understand the nature of performance issues, both current and future, and that this matrix pushes for an integration of aligned solutions.
- leading on from the above, that this Matrix lays the ground work to be able to track critical incidents and outcomes of the potential performance impact that leadership development can have, and do so at multiple levels of performance.
- that leadership is presented as more than just effectiveness; that for it to be considered "responsible" it must also be seen to be ethical and enduring and that to be judged as such it needs to be reviewed from multiple constituents.
- that the model enables one to think of the practice of Responsible Leadership as embracing both the "hard" and the "soft," and that this is a business necessity of leadership.
- that the model proposed is not a prescriptive, normative model. but rather allows for each organization to identify those capabilities which, given their context and challenges, will most likely make for Responsible Leadership ("it allows us to identify the practices and capabilities we need to have and develop for our leadership to be considered effective, ethical and enduring from multiple stakeholder perspectives").

Perceived Weaknesses of the RLP model

- that because the model includes unconventional, non-western perspectives (for example the assumption that leadership is lent to one and is thus in a reciprocal relationship with followership), it may be perceived to have limited utility and appeal in the USA business environment.
- that the model includes both "hard" and "soft" elements, the latter which may be negatively, or at best skeptically, received by USA business leaders.
- that the means by which to tie the performance contributions to leadership development are not yet available and may be a long time in the coming, if indeed at all possible (with any business credibility).
- that the RLP model and how it differs from other leadership models is at first difficult to understand and not immediately apparent. To really understand the significant difference of this model a more explicit, gradually building explanation is needed to make sense of its power, wisdom and leverage for performance.
- that the energy and wisdom of the model resides more within than outside of the author which makes it difficult to access on one's own. ("I need you there to explain it to me, then I understand and am excited by it!")

Summary and Conclusions

The model for "Responsible Leadership for Performance" has been developed and articulated as a unique theoretical and systematic view of leadership. It offers what is seen at this point to be a "true" model of sustainable leadership. Yet, it is recognized that the model may still be too complex and will likely be simplified through further development. To this point:

- The model for "Responsible Leadership for Performance" has demonstrated high content and face validity among the reviewers (responsible leaders and responsible followers).

Next steps include the following:

- The model for "Responsible Leadership for Performance," will be examined against the Toro Company case, providing high potential for vivid illustrations of (1) the leadership components (Bell, 1993), (2) the performance components (Swanson, 1994) of the model, and (3) the leadership-followership dimension within the model.
- Following the Toro Company case study, an agenda for research will be proposed for inquiry into "Responsible Leadership for Performance."

The model for "Responsible Leadership for Performance" represents a unique perspective on sustainable leadership. The core contribution of this effort is the integration of the "personal characteristics" view of leaders at the top, the "performance-systems view" of the complexity of the organization, and the recognition that leadership requires willing followership at various levels. This initial developmental effort is the first in a planned series.

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The Role of the *Human Resource Development Quarterly* in Shaping the HRD Profession: An Eight-Year Perspective

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Editor, Human Resource Development Quarterly

The contents for the eighth volume of the Human Resource Development Quarterly, the Academy's (and ASTD's) refereed journal, has now been determined. During its eight years, the journal has matured in providing an outlet for scholarly presentation and debate of HRD issues as counterbalance to the popular press. It has fostered community among multi-disciplinary professionals. Authors, reviewers, and board members represent a wide range of field backgrounds, research methodologies, experience levels, and foci. Acceptance rate continues to run at about 30%. Suggestions are made to enhance the possibility of potential authors having their manuscripts accepted.

Every academic field is marked by its literature. The more mature the field, the more developed are the scope and quality of the literature available to its members. Throughout its relatively young life, the field of human resource development, and its component fields of organization development, personnel training, and career development, have been well served with quality, practitioner-oriented journals and newsletters. The same, however, cannot be said of the scholarly or academic literature available to members of the profession, though this situation, fortunately, is changing, in large part through the contributions of the *Human Resource Development Quarterly* during its eight years of existence. While the field of human resource development, perhaps more than many fields, has been susceptible to the whims and fancies of fads as they come and go--from programmed instruction to accelerated learning, re-engineering, adventure learning, right- and left-brain theories, Myers-Briggs Temperament Indicator, learning organizations, chaos theory, cultural assimilators, 360-degree feedback, mind maps, appreciative inquiry, large group strategic planning, scenario planning, and the endless list that confronts us at every conference and in each new "best-seller" in the field--HRD is beginning to mature, as marked by some of the journals represented at this conference. Further, new journals are emerging, such as the other journal owned in part by the Academy, the *Human Resource Development International*, which fill another important role of providing a bridge between scholarly inquiry and practice. There is an important role to be filled by journals in all three areas.

The *Human Resource Development Quarterly* (*HRDQ*) has played an important role in this field's maturing process. In the beginning, there was a long gestation period before the *HRDQ* was birthed by the Research Committee of the American Society of Training and Development with ASTD as the sponsor, the (then) Training and Development program at the University of Minnesota as its temporary home, and Jossey-Bass as its publisher. Beginning with the eighth volume, the Academy of Human Resource Development joined ASTD as co-owners of the journal. The Ohio State University, the home of our new editor, Ron Jacobs, has been part of this partnership for the past four years. As of this conference, a new partnership will be formed with the naming of a new associate editor.

From my perspective of four years as associate editor and four years as editor, it is exciting to see these new partnerships emerging. The maturing process of the journal and of the field are obvious from this eight-year perspective. The Academy of Human Resource Development, from its inception, has distributed the *HRDQ* to all of its members. This will, of course, continue in the new ownership agreement. The American Society of Training and Development has made the *HRDQ* one of three options provided to all members at no additional

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cost beyond membership, and we anticipate even more subscriptions through ASTD's reduced subscriptions to those not selecting that option. Subscriptions have climbed to about 6,000, and the projection is for about 14,000 by year end. The quality of journal articles continues to be high. The manuscript flow is good, leaving the journal in a position of having manuscripts allocated a couple of issues out. The inception of the Richard A. Swanson Award for Outstanding *HRDQ* Article has recognized outstanding scholarship presented in the journal. Respected scholars are members of the journal's Editorial Board. Many highly respected and emerging scholars provide an exceptionally comprehensive review process, and the Associate Editor vacancy attracted outstanding candidates. All of these are signs of the maturity that the journal has achieved over its eight-year life.

Purpose

In the first issue, Swanson (1990) described a vision for the role that the *HRDQ* could play:

> Many of us see *HRDQ* as the start of a community of HRD scholars. I believe this research quarterly will provide the intellectual footing and research credibility HRD requires to mature as a field of study and practice. (p. 2)

Swanson went on to describe the eclectic nature of the HRD field, coming as it does from such diverse backgrounds. The hope of the early champions was that the *HRDQ* would serve as a venue for a wide range of backgrounds of authors committed to HRD, whose publications previously appeared in the foundational areas of their expertise but were then not widely available to others in the HRD field. Experience has borne this out. Authors have come from adult education, vocational education, mineral engineering management, public administration, management, political science, labor education, industrial relations, and many more. Practitioners and consultants, in addition to academics, are also authors.

Another form of inclusiveness to which *HRDQ* has been committed has been to provide outlets for both quantitative and qualitative research (as imperfect as these descriptors might be) and to integrate the philosophies of human development and human capital.

Format Used to Meet Purpose

From the beginning, the format of the journal has remained the same:

- a feature article, usually refereed, with one or two invited responses, and, sometimes, a response from the feature article author
- refereed articles, usually two to three per issue
- forum section, which includes scholarly non-refereed articles that are designed to explore controversial concepts within the field, challenge existing theory, suggest research hypotheses that have not yet been tested, respond to articles published earlier, and so on; again, usually two to three per issue
- media reviews, including materials that might not fall obviously into human resource development, such as research, economics, and future studies, for example; again, generally two to three per issue

It is not always easy to stay with this format. Getting the right mix of manuscripts in time to assemble an issue requires coordination, hard work, and just plain luck! The most difficult task has been identifying a feature article in sufficient time to identify invited reaction authors, and it has been even more problematic to get the reactions to the feature author for a "final word."

Success in Meeting Purpose

How successful have we been in meeting these specific diversity objectives? With the number of manuscripts received exceeding 400, we continue to receive a wide range of recommendations (from 4 or 5 reviewers) on every manuscript, reflecting, I think, the diversity of reviewers available to us. One of our ongoing struggles as editors is to determine our roles vis-a-vis the role of the reviewers in determining which manuscripts to pursue for publication. Another interesting phenomenon, from my perspective, is the difficulty in finding manuscripts for the forum section as compared with the refereed section. Finding a "Feature" article is an even more difficult task.

I believe that we have filled at least a small role in providing opportunities for fields within HRD to talk with one another, and this has created synergy within the field. Yet, just as the Academy continues to struggle to answer the dilemma of what some perceive to be a dichotomy between theory (research) and practice, so, too, do we struggle in the *HRDQ* to find adequate ways to reflect research and practice interests.

With other fine journals around, and others emerging, we have been pleased to see that we continue to receive an adequate flow of manuscripts, and, while obtaining the quality desired has not been as easy, we have succeeded in maintaining a high quality. Through eight volumes, we have not had to compromise on quality, and we have met our page length goals and have submitted manuscript to the publisher (close to) on time.

It will be very interesting to see what happens to the new subscriptions that have emerged from ASTD's new program. Many of these subscribers are (and will be) practitioners rather than academic scholars. Our traditional subscribers have been academics, with others being libraries, corporations, and academic departments. How well does the *HRDQ* speak to practitioners? How interested are practitioners in reading about theoretical underpinnings for practice? This will be a major measure in the future of how well the field of HRD is continuing to mature.

Another objective that has never been stated explicitly, but has clearly been met, has been to provide an outlet for advanced graduate students' work. While media (books, software, video) reviews have been primary outlets, even including instructor assignments from which one or two might be of sufficient quality for publication, advanced graduate student authors have made significant contributions to the forum and even the refereed sections of the journal. We have also reached an agreement with the Donald Bullock Outstanding Dissertation Award Committee of ASTD (which this year will be jointly offered by AHRD and, in the future, will become solely the responsibility of the Academy) to publish an article based on the winning dissertation each year. The Academy is also sponsoring an award for outstanding masters paper, which may also be a source for an *HRDQ* article.

Another area of diversity in which we have interest is supporting and encouraging a wide range of research methodologies, including both quantitative and qualitative approaches. In spite of that desire, however, a 1995 customer survey conducted by Jossey-Bass to determine reactions of subscribers to the journal found that, while there were very few concerns about the journal, and that there was widespread agreement that the scholarly level of the journal was appropriate, there was a feeling that there were too many quantitative articles. To check the validity of this observation, I analyzed the 13 refereed and 10 forum articles published in volume 6 (omitting the invited reactions). Of the 13 refereed articles, 8 were positivistic (descriptive, experimental, relational, quasi-experimental), while 5 were qualitative (one each of interpretive, case study, historical, grounded theory, and review of literature). Of the 10 forum articles, 1 was positivistic, 4 were reviews of literature, and 5 were opinion or "thought" pieces. So perhaps in the refereed section, there was some validity to the observation. I have repeated this process for 1996 (volume 7). The results are markedly different from the previous year. Of the 12 refereed articles published, only 3 were positivistic. The remainder reflected qualitative case studies (2), review of the literature (3), theory development (2), observer-participant, and critical incident. As in the previous year, the forum articles continued to reflect a strong bias toward "opinion" pieces: 7 of the 9 fit this category, with one each of positivistic and theory development. The question is, what "should" the "proper" balance be? Is it half and half? Our editorial approach has been to encourage every type of research and to hold each to standards of quality appropriate for the type of research methodology used. The change from 1995 to 1996 is not a reflection of a change in editorial policy. Rather, it is a reflection of a change in manuscripts submitted. Perhaps the perception has now developed to affirm qualitative or non-positivistic research methodologies.

This balance and quality were also exemplified in the number of articles selected from the *HRDQ* for inclusion in the Academy's *Human Resource Development Research Handbook: Linking Research and Practice*'s chapter on exemplary research. Many others could have been chosen, but were not, to provide a balanced perspective of journals in the field.

How Can HRD Professionals Become Involved with the *HRDQ*?

In addition to being consumers, HRD professionals can participate in the life of the *HRDQ* in many ways:

1. ***As an author in the refereed section*** These 20-25 page manuscripts need to meet the rigor of criteria applied to research and are reviewed by a panel of five.
2. ***As an author in the forum section*** These manuscripts--thought pieces, pilot studies, reactions to previously published articles, and so on, are generally much shorter than those in the refereed section and are reviewed by the editor for acceptance.
3. ***As a media reviewer*** Each issue contains a review of books, software, videotapes, and other media. Material for review is provided if desired. The publication date must be within a year of being current. These manuscripts are reviewed by the associate editor for acceptance.
4. ***As a referee/reviewer*** We are always in need of reviewers for submitted refereed manuscripts. We want scholars who are themselves published in refereed journals who are willing to make the professional contribution of a significant amount of time to produce quality reviews. We are especially in need of people with skills in various qualitative areas of research, and, at the moment, we need people with some background in the broad field of human resource management.
5. ***As an editorial board member*** Each year, we replace two to three board members for a three-year term. The commitment required is to attend the annual board meeting, associated with the AHRD annual conference, and to participate actively in supporting the journal during the year.
6. ***As associate editor and editor*** Every four years, a new associate editor is selected. Ron Jacobs will succeed to editor beginning with Volume 9 (in mid-1997). An associate editor will be selected during this conference. The commitment is for eight years: four as associate editor and four as editor. This person will normally come from the editorial board or, at minimum, the pool of referees/reviewers.
7. ***As a booster*** Does your library subscribe to the *HRDQ*? Does your company (or a company you know) support the *HRDQ* as a contributor or supporter? Both of these processes are critical to the ongoing survival and success of the journal.

Participation in any one of these roles will forward the agenda of human resource development, as well as provide a platform for the participant's own personal growth and development. The editorial staff is very willing to work with anyone in any of these roles to improve the possibilities of success in completing the desired task.

How Can Authors Increase the Possibility of Publication?

Every manuscript has its own idiosyncrasies. Having said that, however, there are definitely things authors can do to improve the odds of having their manuscript selected. Based on my review of over 400 manuscripts submitted to the *Human Resource Development Quarterly*, and at least 100 more as Executive and Consulting Editor for the *Journal of Education for Business*, and as chair of the editorial board of the *Journal of Vocational Education Research*, here are suggestions for handling the most frequently occurring problems faced by authors. Some are easily remedied; others are more difficult.

1. Use the format specified by the journal, no matter how inappropriate you believe them to be or however unfamiliar you may be with the style. *HRDQ* requires the use of the fourth edition of the *Publication Manual of the American Psychological Association* (American Psychological Association, 1994). It has been quite amazing to me how many authors totally ignore this requirement. When manuscripts are returned to be put into this format, the revisions often come back incorrectly using the specified style. It is difficult to believe that authors actually think that editors will do this for them.
2. Have your article edited by someone with excellent writing skills, even if you have to pay for it. Often, we receive reviews back from reviewers with negative recommendations for publication, yet the comments made hardly address content. The writing is often so poor that reviewers are not able to see past the poor writing. This is especially important for authors for whom English is not their primary language. While the journal is committed to being an international journal, the language of the journal is English. An appropriately written manuscript in the language of publication is important for success with reviewers and the editors.
3. Review guidelines before submitting the article. How many copies are required? (We require six.) Who are the copies to be sent to? (We want them sent to the editor.) What is required to insure a "blind" review? (We request a separate title page that can be removed prior to blind review, and all references to "my work" or any other internal references that would provide clues of authorship must be removed.) Failure to follow these guidelines can add immeasurably to the time required for the review process.
4. Make the relevance to HRD clear and explicit. Our experience is that we receive many manuscripts that are implicitly appropriate for publication in the *HRDQ*, but the authors leave it up to the reviewers, and ultimately the readers, to make the connection. We want such connections to be explicit.
5. Describe methodology completely. Readers should not be left guessing about what was done or why it was done. This section doesn't have to be lengthy, it just has to be complete.
6. Avoid the formalities of a dissertation. Over the years, traditions have developed about the format and structure of a dissertation. Because most graduate students do not get the experience of writing for publication, their own model for writing continues to be the dissertation. Such structure is not appropriate for a published article. Potential authors are, hopefully, subjected to reading lots of journal articles. These should be examined prior to writing for publication. As just one example, hardly ever are hypotheses listed in a journal article as they often are in dissertations. Rather, research questions are posed.
7. Be internally consistent with the methodology of your study. If your methods section indicates that certain steps were followed, the reader should legitimately expect that the findings would reflect these steps. If a qualitative study is described, then one should expect to see this methodology carried out throughout the article.
8. If your study is positivistic, and you are wanting to generalize your findings, be sure that the population is defined, your sampling is described, and your sample is adequate. Response rate also has to be adequate, or the burden of the argument is on you to make the case for its acceptability.
9. In positivistic studies, you must provide reliability and validity data. These are not optional requirements; they are essential in supporting the appropriateness of the findings presented.
10. If your manuscript includes statistical analyses, provide a computer disk of your raw data. All of our statistical manuscripts are reviewed by a statistical reviewer. If a computer disk is available, assumptions behind the statistical tests can be checked and

alternatives explored. If the disk is not available, long, complex letters may be required, and both parties may be left discontented with the results.

11. A qualitative study is not an excuse for a lack of rigor. In some ways, there is still a struggle going on about what criteria to use in evaluating a study that does not use traditional positivistic approaches. Our experience with reviewers, however, is that there is a belief that qualitative articles do not generally meet quality standards--not because qualitative articles are less acceptable for publication (they aren't), but because the same rigor is often not applied.
12. Respond to the editors' feedback quickly. We make detailed recommendations to every author on ways in which the article can be improved. It then becomes the author's responsibility to respond to those suggestions, either by incorporating the changes into the manuscript or by telling the editors why those suggestions are not appropriate and why they have not been incorporated into the manuscript. Getting the revisions back to the editors quickly can also enhance the probability of publication. In any case, it will definitely be given faster consideration.

Where Do We Go from Here?

The journal now moves to a new era, with a new editor and a new associate editor. Further, the *Human Resource Development Quarterly* will need to be clear about its purpose and role within the profession, as new journals in the field continue to emerge, as the field itself continues to mature. The profession and its professionals need to continue to take responsibility for its journals as all of our journals play an important role in shaping the HRD community.

I am confident that Ron Jacobs, as the new editor, would be pleased to receive feedback that will help the journal continue to improve. Further, Ron, Brent Mattson (our Managing Editor), the newly elected associate editor, and myself will all be willing to talk with you about any aspect of your involvement with the journal. The *HRDQ*, with your help, will continue to be the premier scholarly journal in the field.

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An Update on *THE INTERNATIONAL JOURNAL OF TRAINING AND DEVELOPMENT*

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Many observers of the HRD field have long felt there was a need for a major journal in the field that would focus internationally, doing what is possible to bring together the scattered research going on around the world. That led to The International Journal of Training and Development, sponsored by Blackwell's.

The Journal's Scope

The *International Journal of Training and Development* (IJTD) aims to provide an international forum for the reporting of high-quality research, analysis and debate for the benefit of the academic and corporate communities as well as those engaged in public policy formulation and implementation. The scope of the *Journal* is training and development, broadly defined. That includes the determinants of training, training and development practice, and policy and strategy.

The Determinants of Training. Examples of appropriate topics include:

- Specifying and testing the explanatory variables which may be related to training
- Identifying and analyzing specific factors which give rise to a need for training and development as well as the processes by which those needs become defined, for example, training needs analysis
- The need for performance improvement
- The training and development implications of various performance improvement techniques, such as appraisal and assessment
- The analysis of competence

Training and Development Practice. Examples of appropriate topics include:

- The design, development and delivery of training
- The learning and development process itself
- Competency-based approaches
- Evaluation: the relationship between training and individual, corporate and macroeconomic performance

Policy and Strategy. Examples of appropriate topics include:

- Organizational aspects of training and development
- Public policy issues
- Questions of infrastructure
- Issues relating to the training and development profession

The *Journal's* scope encompasses both corporate and public policy analysis. International and comparative work is particularly welcome, as is research which embraces emerging issues and developments.

The IJTD publishes research which ranges from the theoretical, conceptual and methodological to more policy-oriented types of work. Research may or may not be empirical and may be qualitative or quantitative.

The Journal's Emphasis

Because the principal purpose of the IJTD is to encourage an international dialogue in the field of training and development, the editors are particularly interested in work which is international or comparative.

The Journal also seeks to be genuinely multidisciplinary and this concern is reflected in editorial policy. Articles adopting an interdisciplinary approach are particularly welcome.

The IJTD's editors are keen to strengthen the links between academic work and policy and practice and wish to encourage research which can demonstrate a potential significance in this respect.

Submission of Articles

The Journal takes a unique approach. This section describes that approach as well as the referee process, desired manuscript length, number of copies to submit and other information relevant to article submission.

Approach. The Journal is focused on an international, multidisciplinary readership that links academic work and professional practice.

International Readership. The IJTD has an international readership. It is likely that only a minority of an article's readers will be in the country of the author. Contributors are asked to bear this in mind, for example, in the use of language and in making any assumptions about the reader's knowledge of the country in which the research has been undertaken. Authors would ensure that their articles are intelligible to those who may not be familiar with the traditions, infrastructure and policies of their particular countries. It is likely that one of the referees asked to comment on an article submitted for publication will be from a country other than that of the writer.

Multidisciplinary Readership. Any terms, concepts or methods which are specific to a particular discipline should be explained so that they can be understood by readers from outside that discipline.

Links Between Academic Work and Professional Practice. The IJTD is read by practitioners and policy makers as well as by academics and it is part of editorial policy that the Journal provides a bridge between academic work and professional practice. Where appropriate, authors should indicate any potential significance that their work may have for training and development policy and practice.

Refereeing. All articles submitted to the IJTD are sent out for refereeing under the conventional 'double blind' system.

Length. Articles should be between 5000 and 9000 words in length. An accurate word count (including references) should be provided. Tables and figures should be counted by treating the space they occupy as an equivalent number of words.

Number of Copies and Format. Four copies of articles are required. They must be typed on A4 paper, on one side of the paper only, double-spaced and with margins. Each copy should have a cover sheet containing its title and the name of the author(s). All work submitted should be checked carefully for typing errors, spelling mistakes and other faults. Pages must be numbered.

Footnotes and References. Footnotes are additional material which, while amplifying the text, are more conveniently discussed separately. They should be marked in the text by the use of asterisks (*) and daggers (†) and placed at the foot of the relevant pages. They should, however, be kept to a minimum, and wherever possible, be incorporated into the text. References indicate the precise sources of books, articles, statistics etc. cited in the text. These should be marked by the usual convention of numbers and grouped together at the end of the article. Examples are provided below:

Footnote. Examples of footnote style are shown below:

In the text	It should be stressed, however, that in Britain apprenticeship was historically given little state support and government intervention was minimal.*
At the foot of a page	*Under the sixteenth century Statute of Artificers, an apprenticeship was a legal requirement for practicing certain trades. This was narrowed by common law judges and abolished in 1814.

Reference. Examples of reference style are shown below:

In the text	They also sought to develop modular methods of training, to increase the amount of off-the-job training, and to set new standards for apprenticeships which placed less emphasis on time-serving [10].	
At the end of the article	10	Senker, P., *Industrial Training in a Cold Climate.* Avebury, Aldershot, 1992, Chapter 7.

Tables and Graphs. These must be numbered consecutively, checked for accuracy and clearly presented. Extensive use of either should be avoided to minimize printing costs.

Mathematical and Econometrical Material. Algebraic equations and models should be used only when they clarify or advance the argument. Where used their implications should be discussed in the text while data and methodological discussions are confined to a technical appendix.

Copyright. Authors must indicate if their articles have been submitted or published elsewhere even if in a different form. If subject to copyright then clearance must be obtained and sent to the Editor. Work which is to be in a book prior to its publication in article form is not acceptable. All articles published in the IJTD are subject to the Journal's copyright and may not be published elsewhere without the Journal's consent.

Autobiographical Note. Each contributor should supply, with his or her manuscript: full name, postal address, telephone number, fax number, appointment or job description, name or organization (and whether this may be published) and a summary of experience, achievements and qualifications, whether business, professional or academic. The autobiographical details will be used for the "'in this issue of IJTD" page.

Abstract. Authors should include four copies of an abstract of 100-150 words, double-spaced. This should be on a separate sheet containing the title of the article but no material by which the author(s) can be identified.

Submission of Other Materials

Books for Review. Review of significant books are commissioned by the Managing Editor.

Register of Current Research. This will provide the basis for an occasional feature in IJTD. Researchers wishing to publicize their work should send concise summaries to the Managing Editor.

Editorial Addresses

USA and Canada. In the U.S.A. and Canada, submit articles to:

- Professor William J. Rothwell
  North America Editor
  International Journal of Training and Development
  Department of Adult Education, Instructional Systems and Workforce
  Education and Development
  The Pennsylvania State University
  305C Keller Building
  University Park PA 16802-3202
  United States of America
  Tel: +1 814 863 2581
  Fax: +1 814 863 7532
  Email: WJR9@psu.edu

Rest of the World. In the rest of the world, submit articles to:

- Pam Arksey
  Managing Editor
  International Journal of Training and Development
  Department of Human Resource Management
  The University of Strathclyde
  Graham Hills Building
  Glasgow G1 1XT
  United Kingdom
  Tel: +44 (0) 141 552 4400
  Fax: +44 (0) 141 552 3581

Guidelines and Suggestions for Publishing HRD Research and Theory in *Adult Education Quarterly*

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Sean Courtney
University of Nebraska - Lincoln

This article provides an overview of Adult Education Quarterly (AEQ), including a discussion of guidelines for preparing and submitting a manuscript for publication, the process used to review manuscripts, and reflections on the future of research and publications in our respective fields.

The purpose of this article is to familiarize HRD researchers with *Adult Education Quarterly (AEQ)* as a potential outlet for publication of their scholary articles. We will discuss the scope of AEQ , kinds of articles that are published in this journal, how it relates to the field of HRD and other journals in adult education, its editorial policies and guidelines, and how its current editors view the future of research within the fields of HRD and adult education. The views that are expressed in this article reflect those of the current editors and not necessarily the field as a whole or *AEQ*'s sponsoring agency.

Background of the Journal

The journal was originally founded in 1929 as *The Journal of Adult Education* but the name was changed in 1983 to *Adult Education Quarterly (AEQ)*. In its more formative years, the journal sported many opinion and descriptive pieces, the thoughts of leading adult educators, musings on the growth and direction of the nascent discipline called "adult education", and the first glimmerings of theory and research. Over the years, various comparative surveys of the journal have noted the trends and themes of most interest to authors and researchers. The journal has increasingly emphasized research and theory within the field of adult and continuing education. Currently, this emphasis represents the primary focus of *AEQ*.

AEQ represents one of a number of publications throughout the world that are devoted to issues related to adult learning. The journal enjoys the reputation of being the premier North American research journal representing the field of adult education, and is one of only a handful of journals in the world dedicated to research and theory in adult and continuing education. Journals such as *Convergence*, the *International Journal of Lifelong Education*, and *Studies in Continuing Education* represent the international reach of research and theory in the field. *AEQ* is also a frequent outlet for adult education scholars across the globe. The continuing learning of adults is, however, also of concern to the professions. It is not uncommon to find related journals, such as the *Journal of Nursing Continuing Education*, addressing the subject of adult learning. Other journals, such as *Adult Learning*, deal more directly with and attempt to specifically address practitioner concerns. Scholars within the field of HRD who are concerned with matters of theory and research impacting the adult as learner can find publishing outlets in many educationally-based journals here in the United States, in Canada, and abroad. Insofar as the field of adult education can be judged to include issues around training and settings which include business and industry, AEQ has over the years reflected in its pages theory and research of an HRD nature.

(c) John M. Dirkx and Sean Courtney, 1997

Editorial Policy

Adult Education Quarterly (AEQ) is committed to the dissemination of knowledge derived from disciplined inquiry in the field of adult and continuing education. With a circulation of about 5000, *AEQ* is published January, April, July, and October, under the sponsorship of the American Association for Adult and Continuing Education (AAACE). *AEQ* publishes articles representing a broad range of methodological approaches, including: a) empirical studies which use critical, action, participatory, experimental, quasi-experimental, correlational, descriptive, historical, philosophical, qualitative, or interpretive methods; b) theory-building articles; c) interpretive reviews of the literature (position statements or reasoned critiques of articles previously printed in *Adult Education Quarterly*); d) essay reviews (commissioned by editors); and e) book reviews. We have continued having a forum section, which is designed to publish shorter position papers related to the field. As of the Spring, 1996 issue we are initiating a "Letters and Opinion" section in the Journal. This section will provide readers with an opportunity to express particular views and responses they may have to articles published in *AEQ*.

For featured manuscripts and Forum articles, three broad criteria are used in the review and selection process. First, articles must be important in that they significantly advance knowledge and theory. Second, all material must be accurate and technically sound. Finally, articles must be well crafted; that is, they must be clear and well organized. In preparing a manuscript for submission, authors are encouraged to consider the following strategies:

1) Study the Editorial Policy and its sections on guidelines to insure that your manuscript falls within the scope of the journal and will meet stylistic requirements.

2) Consider the Review Criteria (Section E of the Editorial Policy) in developing and crafting your manuscript.

3) Study back issues of *AEQ* and its predecessor, *Adult Education*, focusing especially on articles of purpose and form similar to your manuscript.

4) Ask at least two colleagues who are objective and honest in their appraisals to critically review the manuscript before submitting it to *AEQ*.

Manuscripts submitted to *Adult Education Quarterly* must be grammatically correct and stylistically consistent. The journal uses the ***Publication Manual of the American Psychological Association*** (APA), Fourth Edition. Potential authors should consult this publication for rules governing references and citations as well as other elements of grammar and style. All manuscripts need to be typed, double-spaced and the author(s) need to submit four copies, retaining a copy for their own files. The editors are not responsible for returning copies to authors. Articles generally should not exceed 5000 words, including charts, tables and bibliography. Potential authors are strongly encouraged to obtain and follow Editorial Policy Guidelines for specific information on technical requirements for manuscript preparation.

Manuscript Review Procedures All manuscripts submitted for consideration for publication in *AEQ* are subjected to a systematic review process. The manuscript is first examined to determine if it conforms to the editorial guidelines for the journal (i.e. if it is "in scope"). Manuscripts considered to be "out of scope" are returned to the author(s) with a brief cover letter explaining that they are not acceptable for publication by *AEQ* in their present form and no further review of the manuscript is conducted. Manuscripts determined to be "in scope", as defined in the "guidelines for contributors" (see attachment), are submitted for further review to a panel of consulting editors (CE). Typically, three individuals from this panel are selected to review each manuscript, based on background expertise and knowledge. Decisions as to who will be asked to review the manuscript are made on the basis of the nature of the research question or topic of the manuscript, the nature of the methodology employed, and the availability of CEs. The review process is "double blind," meaning the CEs do not know the identity of the author(s) and the author(s) do not know the identities of the reviewers. CEs are requested to return their reviews within five weeks of the date in which it is sent out. CEs who have not returned their reviews with this time are contacted and requested to complete their reviews as soon as possible. In the event that a particular CE cannot complete the review within this time frame, another CE may be selected for the manuscript in question.

After all reviews have been returned to *AEQ*, they are examined by the editors and final determinations of a) Accept, b) Conditionally Accept, c) Reject and Encourage resubmission, or d) Reject are made, based on the information provided by the CEs. Final decisions on each manuscript are made by the editors of *AEQ*. Letters are then prepared informing the author(s) of the editors' decision. For manuscripts falling into categories (c) or (d), *AEQ* has no further obligation to the authors. The authors are free to re-submit revised manuscripts but they are informed that these submissions will be subjected to a new full review process. Manuscripts falling into category (a) are, for the most part, ready to publish "as is," with little if any revisions required. Manuscripts falling into the "Conditionally Accept" category require at least some revision before they will be fully accepted for publication. The conditions that must be met before this happens are carefully detailed in cover letters to the authors of these manuscripts. These letters clearly specify that the manuscript will not be published until these conditions have been met to the satisfaction of the editors. In some instances, the revised manuscript may be sent to one or more of the CEs who initially reviewed it for their feedback. When the conditions have been satisfied the authors are informed by letter that the manuscript is now ready for publication.

When a manuscript is accepted, the author will be notified and informed about the next steps in the publication process. To expedite the editing and publishing process, authors of accepted manuscripts will be asked to provide their final version on IBM-compatible or Macintosh floppy disks. Manuscripts produced using WordPerfect 5.1 for DOS or Microsoft Word 4.0 through 5.1 for Macintosh are preferred.

Manuscripts submitted to *AEQ* should not be under consideration for publication by any other journals, nor should they have been published previously in any form (see "Warrant Statement" in Section C). A paper may, however, have been presented at a meeting or conference. In such cases the author should state where and when such a paper was presented. After acceptance, a paper may not be published elsewhere without written permission from AAACE.

Review Criteria The following are used to review research papers submitted to *Adult Education Quarterly*:

1) *Importance of the Problem*. A problem or subject addressed by a manuscript should contribute to knowledge or theory pertinent to adult and continuing education. Importance is enhanced when a paper promotes understanding, or improvement of practice.

2) *Background*. Through the abstract and a brief introduction, readers should be provided with sufficient background information to understand the problem being addressed.

3) *Purpose*. Whether stated generally or in greater detail—as is the case with hypotheses—the purpose of the paper should be clearly and unambiguously stated.

4) *Literature Review*. Research and scholarship should be linked to relevant literature and theory. The applicability of the research and the quality of the discussion are more important than the length of the review.

5) *Approach and Procedures*. The approach and procedures must be appropriate for addressing the stated purpose(s) and research question(s).

6) *Findings*. Findings must be presented and documented to show clear relationships to the purpose(s) and research question(s). Evidence needed to support conclusions must be clearly identified, including the presentation of statistics, charts, and graphs, use of quotations, observational data, references, and citations.

7) *Conclusions*. Conclusions and logical inferences should be pertinent, clearly drawn, and convincingly supported by evidence.

8) *Readability*. All manuscripts must be well-organized, well-written, and readable.

Book Reviews Book reviews are solicited by the Book Review editor. These reviews are not submitted for blind review but are reviewed and edited by the review editor. Decisions as to the books to be reviewed and who is asked to review them are also made by the Book Review editor. "Essay Reviews" of a series of books on selected topics are occasionally commissioned by the editors of *AEQ*. These essay reviews are not submitted for review but are handled by the editors themselves. If you have suggestions for books to be reviewed, or if you should like to review a book, contact: M. Carolyn Clark, Dept. of Education-HRD, 615 Harrington, Texas A&M University, College Station, Texas 77845; Tel: 409-845-4086.

Disposition of Manuscripts Submitted

We receive approximately 100 manuscripts per year. Over the tenure of our editorship, the average acceptance rates have varied between 20 and 30 percent. The content of manuscripts, as well as the authorship, reflect our commitment to diversity within the field of adult education and our intention to encourage more articles focused with an international perspective. Methodologically, we continue to accept and publish manuscripts that represent quantitative, qualitative, historical, and philosophical perspectives.

Reflections and Future Directions

While HRD topics have not appeared prominently in the various surveys of articles published in *AEQ*, the subject has nevertheless received attention within the pages of the journal. Examples of these include Karen Watkins' recent essay review on the definition of HRD and Blomberg's piece on cost-benefit analysis for training. This list might also include pieces which are less overtly HRD-specific but have had to do with adult education in workplace settings. Joyce Stalker's article on "Deconstructing the Myth" illustrates this kind of HRD related article.

HRD researchers are invited and encouraged to submit their work for consideration in *AEQ*. Our position as editors (and hopefully speaking for our editorial board) is that articles are not considered primarily on their ideological persuasion but on their scholarship and contribution to research and theory in the field. The journal seeks top quality manuscripts whatever their political or ideological hue as long as they fall within the scope of the journal. There are too few scholars conducting rigorous research or advancing theory within our fields. While we do not disclaim the political or ideological contexts in which all research and theory are conducted, these positions should not be used to make decisions on the merit of the scholarship. Our journals should be the place for dialogue and discussion around these differences, not a context for censorship or exclusion.

Trends in Research Methodologies The ascendence of qualitative research within the academic community is influencing editors and publishers of scholarly education journals. Criteria arising from and driven by particular methodological or epistemological approaches are being increasingly called into question. Reviewers and editors alike search for "common ground" amid this growing climate of methodological relativism. For example, as they struggle to find a voice to express their work, postmodernist scholars often tax our review editors and ourselves with their often complex and difficult language. Research designs completely foreign to traditional research are emerging within the qualitative arena and stress our abilities to effectively assess their soundness. Authors struggle to find new ways of presenting findings that are more consistent with the epistemological frameworks within which the research was conducted. Similar to the traditional art critic years ago who wondered whether modernist paintings represented art, we look at these new articles and ask, "Is this scholarship?" What constitutes "good scholarship" within these newer approaches is a question that needs to find space within our journals and we as editors need to begin convening symposia to further the conversation.

In addition to the difficult questions being posed by the nature of this research, reporting it is creating some very practical problems for editors and publishers. The substance of qualitative research studies is often difficult to communicate within the page limits traditionally imposed by editorial policies. Publication of qualitative studies sometimes results in fewer articles per issue, as allowance is made for the expanded nature of these articles. We are being pressured by these scholars to find room in our journals for their work or they will take their marbles and go elsewhere. Many of these papers represent excellent pieces of scholarship and we as editors do not want to lose them to other educational journals. But with the economic pressures that most journals are experiencing, how do we change to accommodate these newer form of research?

Trends in Society Current trends within society are likely to influence the nature of the articles submitted to and considered for publication in *AEQ* and other journals dedicated to adult learning. Increasingly, emphasis in both policy and practice is being placed on the relationship of education and work. While education for work has always been a prominent aspect of the field of adult education, research and theory has largely focused on worker and labor education. Upheavals within labor and rapidly changing economic conditions in many countries throughout the world are likely to place more emphasis on this orientation, especially within adult populations. The challenge is to fully understand the complexity of these changes through careful research and theory and to avoid a narrowly focused vocational instrumentalism which is often reflected in the statements and documents of many policy-makers.

These changes are also creating demands for changes in the way higher education sees itself and does its business. We are being increasingly pressured to design educational programs and to conduct research which are more "relevant and meaningful" to the concerns of the "real world." Few of us would disagree that what we do should be relevant and meaningful to the needs of society. What is problematic, however, and should be a focus of our work as scholars, are the questions of who defines these needs, in whose interests are they being pursued, and what do we mean by relevant and meaningful. For those of us responsible for preparing professionals within our respective fields, these questions represent a potential area of scholarly endeavor and should be reflected in the pages of our journals. Examples of these areas of "need" which occupy current public debate are welfare reform and the increasing emphasis on punishment rather than rehabilitation of criminal offenders. Both areas involve education and training of adults as a central element in the debate. Yet one would be hard pressed to find sustained dialogue on these issues within our journals.

Conclusion

In the past, *The Journal of Adult Education* has been an outlet for articles related to the training and education of adults for business and the workplace. Its successor, *AEQ*, has continued this tradition, with an increased emphasis and focus on research and theory. While the differences between this journal and *HRDQ* may be blurred relative to education and training for the workplace, *AEQ* is increasingly serving as a forum for scholars who take a critical perspective to HRD. The journal, however, continues to encourage all forms of scholarship related to HRD and no scholar should feel that the intellectual climate of *AEQ* is somehow inappropriate for their work. The future of publication in adult education and HRD faces a number of formidable challenges, both within the scholarly community and from quantum changes within society. Editors, reviewers, and the higher education community in general need to sustain conversation and dialogue around these issues, particularly within the pages of scholarly journals.

Choose Your Future: Independent Technomancer or Holistic Human Developer

Steven W. Semler
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This study used a historical vector analysis approach to identify three major changes in the roles of HRD professionals: a shift toward participant responsibility for HRD outcomes, the increasing use of technology as an instructional delivery method, and the requirement for HRD to deliver quantifiable performance improvement to gain the credibility needed to provide more holistic human development opportunities. These trends offer the choice of independent technomancer or holistic human developer to future HRD professionals.

The human resource development field is at a crossroads. Social, economic, and technological pressures will offer two different paths to HRD practitioners. The trend toward technology-designed and delivered learning is one dominant path. A holistic approach to human development is the other. If HRD professionals cannot read the signposts before they cross the intersection, then they may forfeit the ability to choose their own futures. The purpose of this paper is to serve as a road map of the trends and future predictions about the nature of HRD as it moves into the twenty-first century.

No method of predicting the future is perfect. We can, however, improve our predictive ability by systematically examining trends and influences in each area of relevance to HRD. This study uses a *historical vector analysis* method to provide some answers to the question of what the field of human resource development will be like in the next five to ten years.

Methods

Historical Vector Analysis. The method used in this study is a hybrid of historical research technique and the author's conception of *historical vector analysis*. This viewpoint treats historical trends as vectors composed of two parts–a direction component and a strength or significance component. The direction of the vector represents the movement of the object of study toward some coherent, identifiable destination. On a dimension of performance review feedback sources, for example, there has been a demonstrable trend toward the use of 360-degree feedback tools (Callender, 1996). This would provide a direction for the historical vector of "toward increasing use of multi-rater feedback." The strength of the vector represents how much influence the trend exerts on research and practice within its dimension. The strength of the vector could be indicated by a numerical score combining (a) incidence of the topic in popular, trade, and research publications, (b) potential of the topic or trend to force or influence change within the dimension, and (c) the rapidity with which the topic flourished in the literature. The greater the trend scores on each of these three scales, the greater its vector strength will be.

Vectors should be examined in relationship to a matrix of variables of interest to the researcher. A single combination of variables will typically, but not always, have only one vector representing a dominant trend. Each cell in the matrix will pertain to a specific topical area or combination of variables, *agency of learning in individual training contexts*, for example. This cell explores the issue of who should control the delivery, content, and pace of individual training. In the past, practice favored instructor-led learning. Recently, however, learner-centered methods have started to become more common. Because the prevalent activity in the dimension is moving toward learner agency, this is the direction of the vector. If there were no discernible movement in research or practice in this cell (i.e., instructor-led methods were accepted as best), the vector would be a *zero-vector*, or one that displays no trend movement. Similarly, the strength of this vector would be determined by how much was written about the trend, the impact

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of the trend, and how fast articles about it were published. Note that relatively new topics and ideas may have very little published about them, but still hold implications of significant change that increases the relevant vector strength.

The application of this methodology follows the following process:

1. Identify the problem and select possible interest variables from previous literature and practice.
2. Select context variables that influence the specific field of interest.
3. Select field of interest variables that form a parsimonious matrix.
4. Identify sources that meet conceptual criteria as artifacts of historical trend data.
5. Identify specific vectors, and their direction and strength from the selected data sources for each cell of the matrix.
6. Describe the pattern of relationships and interactions between vectors in the matrix.
7. Project the vectors into the future and use the pattern of relationships to draw predictive conclusions.
8. Summarize and explain the future state predictions and the implications that the vectors pose to the original questions of interest.

For this study, the author chose to examine a three-dimensional matrix of 4x3x3 variables. The matrix vectors are described by the form of (*HRD issue x HRD activity x context forces*). Primary HRD issues form the first dimension. These represent the following four questions:

1. *Control*: Who should control the initiation, selection, resourcing, and results of HRD activity within an organization?
2. *Content*: What kind of HRD activity should be done within the organization?
3. *Method*: How or through what media should HRD activities be delivered within the organization.
4. *Agency*: What role should the individual or group have in creating, guiding, or directing the HRD activity in which they are participating?

These issues operate in the second dimension of the matrix; the primary areas of HRD activity: training and development (T&D), career development (CD), and organization development (OD). Social, economic, and technological contexts may strongly influence the current and future trends in research and practice. These contextual factors form the third dimension of the matrix. These three dimensions combine to form the vector matrix shown in Figure 1. Each vector can be described as a trend representing the effect of the context variables on the HRD issue as it pertains to the category of HRD activity.

	Control	**Content**	**Method**	**Agency**
Training & Development	**Social →** **Economic →** **Technological →**			
Career Development				
Organization Development				

Figure 1. 4 x 3 x 3 (issue, activity, context) vector matrix of HRD future dimensions.

The same vector direction may be present in more than one cell. There is some evidence to suggest, for example, that the direction and responsibility for HRD activity is shifting toward individuals and away from the central organization in all three HRD activity areas. This may represent a major trend with implications for future HRD research and practice. As such, it would be identified as a major thematic trend.

Powerful computer modeling software could be used to help researchers develop and test different models using the vector data provided by the historical vector analysis technique. This activity is beyond the scope of this present study, however, although additional validity could be gained from such model testing.

Data Sources. The data sources for this study were ten popular, practical, and research publications. *US News and World Report* and *Time* represented the social context. *Businessweek* and *Fortune* magazines represented the economic context. *Popular Science* and *Wired* magazine represented the technological context. *Training* magazine, *Training & Development*, the *Human Resource Development Quarterly*, and the *Performance Improvement Quarterly* represented the HRD context for practice and research. The article titles in each publication served as historical artifacts of interest and thinking over the period from 1990 to 1996. The criteria for selection were that the periodical had to have (a) relevance to the selected dimension, (b) broad circulation and audience, (c) articles produced by many authors and edited by the publisher, and (d) articles about current trends and news or research within the selected dimension. Another consideration for source selection was the researcher's ease of access to the data through on-line computer databases.

Data Collection. The researcher compiled a list of all article titles in the source publications for the period from January 1, 1990 to December 31, 1996. These article titles formed the basis for the direction and strength of the historical vectors in each of the selected dimensions. Tables of contents, abstracts and article texts were used successively to determine the degree of significance and controversy generated by any given article.

Data Analysis. Each article was assigned a direction component for a cell in the matrix if it described a contextual influence upon the cell or provided evidence of a technique or trend relevant to the cell. The direction of each vector was described as "toward X," with X being the conceptual direction toward which the article suggested that movement was being made. Articles having no related direction were labeled *zero vectors*.

The strength of each non-zero vector was scored after identifying all direction vectors according to three criteria. The first criterion represented the *prevalence* of the trend in the literature. This was the total number of times that the vector topic was mentioned as an article title or main topic, as a percentage of the total number of all non-zero vectors. The second criterion represented the *relative impact* of the trend. It was scored by the degree of departure that it represented from previous practice. Each vector received an integer score from 0 to 1 (0=no change, .25=innovative change or modification of previous methods, .50=inventive or new concept, .75=fundamentally different approach or method, 1.00=fundamentally different approach or method that invalidates or replaces previous methods). The third criterion represented the *relative speed* with which the trend vector spread in the source publications. It was scored as the average number of articles published per month on the topic from first to last incidence as a percentage of the highest number of articles published in all sources in a month. These three scalar elements of each vector are averaged to produce the vector strength.

The researcher then used the vector contents of the matrix to build an overall system model. This model illustrated major relationships between the variables, identified larger (multi-cell) trends, and possible implications of the trends for the future shape of the field of HRD. The system model also suggested possible future answers for the HRD issue x HRD activity cells. This system model provides the basis for the discussion of trends and results.

Results

The (preliminary) historical vector results of the study are shown in Figure 2. The research identified 39 major trend vectors. Fifteen vectors applied to training and development, ten to career development, and fourteen to organization development. Twelve vectors applied to the control issue, thirteen to the content issue, eleven to the method issue, and three to the relatively simple agency issue.

	Control	Content	Method	Agency
Training & Development	→ Outsourcing → Performance Orientation → Decentralization → Evaluation of HRD → HRD as Business Partner	→ Basic Skills Education → Computer Literacy → Team Skills → Thinking Skills → Knowledge Creation and Handling Skills → Work/Family Skills	→ Interactive Technology Delivery of Training → Increasing Use of Computers and Technology → Increasing Capability and Use of EPSS	→ Greater Role of Individual in Learning
Career Development	→ Personal Continuing Education → Self-managed Careers → Decreasing Life Cycle of Job Knowledge	→ Transferable Skills → Computer Skills	→ Performance Coaching → Collaborative Peer Networks → Internet Forums → Continuing Education	→ Individual Career Responsibility with Organization Support
Organization Development	→ Greater Involvement of Stakeholders → Increasing Speed of Change → Increasing Flexibility Required → HRD as Business Partner	→ Learning Organization → Lean Production/ Downsizing → Increasing Automation → High Performance Work Systems → Organizational Learning Systems	→ Large Scale Interventions → Collaborative System Design → Alignment → Computer-aided OD Interventions	→ Greater Role for Individual/ Stakeholder Partners in Change Process

Figure 2. Resultant vector matrix. Each cell lists the major trend vectors relevant to the combination of variables that describe the cell.

Discussion

Dominant Trends in HRD. From the vectors identified in this study, there appear to be three major categories of movement within the field of human resource development. The first is the increasing role of individuals in the control and outcome of HRD. This mirrors trends in the broader social context giving more choice and power to the individual. The second trend category is the increasing use of technology in work place learning and performance roles. As technology continues to improve in capability and cost effectiveness this trend will increase in importance. The third category of change facing HRD is change within the economic and organizational context in which it operates. Economic demands on organizations place increasing pressure on HRD practitioners to focus on quantifiable performance improvement and the payoffs of HRD. This also offers the opportunity for HRD professionals to become business partners in their organizations, helping to define strategic direction and support major initiatives. The economic context will also support additional reduction of the labor force through technological replacement or outsourcing. Each of these trends deserves additional explanation.

The Power of the Individual. As organizations continue to withdraw traditional career development support and their organizational structures flatten, they are also giving more power to their employees. Part of this power comes in the form of obligation; part of it comes in the form of opportunity.

Organizations will continue to expect their employees to shoulder a greater share of the knowledge-based responsibilities that once were the sole province of management. Some of these include customer relationship management, strategy development, market intelligence gathering, and the development of employee productive capability (Bassi, Benson, & Cheney, 1996). The organization gains a benefit in productivity and knowledge generation from this arrangement, and the employees can gain greater satisfaction and personal development from their roles. Employees who do not perform well in these roles, however, become vulnerable to layoff or career stagnation. The competitive economic environment in which the organizations exist make the full utilization of all employees a requirement for market survival.

Employees gain some significant benefits from this trend, as well. They expect and receive greater control of their working conditions and a greater voice in the decisions that affect their economic and emotional lives. Individuals can use new technologies to learn in ways that accommodate their preferences and heighten their interest in the instructional content. Diversity and work-family management training content also offer people a greater learning benefit beyond the immediate job tasks. Broad-based skill training gives employees skills that can help make them "layoff-proof" (Mumford & Peterson, 1995). People who improve and maintain marketable skills and abilities are able to find new and interesting positions within their current organizations or elsewhere in the job market. On the organizational side of this trend, employees benefit from the large scale collaborative intervention strategies by gaining the chance to participate in decisions and to improve the quality of design and implementation of changes that affect them (Dannemiller & Jacobs, 1992). Again, this enhances the quality of both the organizational and the individual outcomes. Organizations are beginning to believe that individual empowerment is a win-win situation for everyone. Going beyond the specific job task requirements to enhance the ability of individuals to perform for themselves and the organization is a more holistic approach to HRD that is becoming more prevalent.

The Power of Technology. The increasing use of technology as a training delivery method is directly related to the increase in the utility and cost-effectiveness of the new technological tools. Technology like multimedia training courseware, internet or intranet training delivery, electronic performance support systems (EPSS), and distance learning and teleconferencing tools offer two significant advantages to cost and performance-conscious organizations. Automated technology has the potential to deliver instruction at a lower cost than instructor-led methods. It also offers a better application of adult learning principles for some content areas that enhances the learning and performance abilities of the learners (Tennyson, 1994). The inclusion of practical exercises, games, and simulations in computer-based training is an example of this enhanced learning potential. An additional advantage of technology-based training is that it can be used asynchronously. No longer will employees all have to be away from their work stations for extended periods to participate in training. Instead, they can access the training and simulation software from their desktop computers and work through the course content at their own pace. This reduces the time that employees spend off their primary tasks and can also significantly reduce travel costs.

One of the difficulties with technology is that it enables the displacement of employees as their job tasks are automated. Those employees most likely to be displaced are those with the least marketable skill sets (Tapscott, 1996; Rifkin, 1995). The reason that they are displaced is because the jobs they hold require little higher thinking skills and are, therefore, the best targets for automation. The people displaced by technology often have no other alternative than to accept low-paying service sector jobs. Another difficulty is that the ability to operate technology efficiently takes additional training and practice. Technological literacy will continue to be a major requirement of employees and educational systems for the foreseeable future. The skills required to design and build computer-based courseware are currently in short supply. As the demand for computer-based training increases, the position of multimedia instructional author will become an important HRD role.

The Power of the Economy. Economic forces emphasize three major trends in HRD practice. Each of these trends has the result of increasing performance or decreasing cost to the organization. Both results help the organization compete and stay viable within its market.

HRD activity within an organization can be viewed as either a cost or an investment. It is the challenge of HRD professionals to demonstrate to a cost-conscious executive management the value of their work. As mentioned earlier, the cost of training delivery is one of the reasons that computer-based instruction is gaining such emphasis. Strong evaluation techniques and a performance orientation are core requirements for success in this environment (Swanson & Gradous, 1990). HRD activities must be designed and aligned with the broader goals of the organization in mind.

When HRD practitioners have the ability to demonstrate improvements in individual and organizational performance made through their activities, they can gain the credibility necessary to become partners in the business. As business partners, they can help set the strategy of the organization, make resourcing decisions, and champion the cause of human resource development as a competitive advantage. In this role, HRD professionals have a dual mission. They must deliver quantifiable performance improvements to maintain their credibility. This credibility allows them to work proactively to increase the learning capability of the organization. Implementation of the learning organization concept and organizational learning systems to support it play heavily in the continuing development of the knowledge generating capacity of people and systems within the organization. This holistic strategy, increasing performance through human and organizational development, offers increasing rewards to organizations that pursue it.

It is quite likely that HRD professionals will have to follow this strategy with fewer resources (Bassi et al., 1996). Automation and the inability to explain the performance contribution of their work has allowed organizations to reduce the size of their training and HRD functions. Outsourcing of HRD work will continue to grow, although many organizations may increase the overall size of their HRD staff as work place learning becomes more important to competitive performance. Much of the work outsourced is and will continue to be of two types: work requiring special expertise and work infrequently required by the organization. The new HRD professional role of multimedia courseware designer meets both of these criteria, making it quite likely that computer-based training will be provided by external consultants or multimedia vendors.

Implications. Technology and the social forces affecting business, government, education, and the non-profit sector are changing the context in which human resource development activities take place. It is not only the demand for HRD work that is changing, but also the type of HRD activity. Stand up training is giving way to interactive computerized learning activities. Managed career development plans have been replaced by portable, self-managed career planning kits. Traditional organization development (OD) activities are being displaced by reengineering and large scale interactive processes. The increasing speed of change made possible by technology and made necessary by global competition is also driving up the rate of change in HRD activities. Technology, interestingly enough, is forcing both specialization and diversification into two new core areas of HRD practice. The first of these is the computer-based training and multimedia design expert, referred to whimsically as a "technomancer." The second is that of the holistic human developer, a professional who facilitates the unleashing of human potential across the arbitrary boundaries of work, family, school, or community and focuses on whole person development.

Independent Technomancers. Development of sophisticated interactive multimedia training tools, as well as learning delivered through electronic performance support systems (EPSS) and the Internet, demand a new set of skills from those previously held by HRD professionals. Mastery of the principles of adult learning, instructional design, and organizational systems will allow these professionals to command high fees and interesting work. Their products will replace the need for human trainers, reams of printed instructional material, and huge blocks of non-productive time.

These technically sophisticated professionals are becoming course designers, presentation experts, and project contractors to other organizations. The great majority of this new instructional design work is being done by small independent consulting teams consisting of only one or two people. This has implications for both the flexibility and the job security of these independent "technomancers." In as much as the independents are technical experts in both computer-based training development and in HRD theory they will not lack for work. They will generally be able to take a wide variety of jobs and the best of them will be able to pick and choose the most interesting and rewarding from among the contracts available. The flip side of this is that these new HRD technomancers will be independent consulting contractors. There are no guarantees of income, job security, or health care benefits in the world of the independent consultant. Additionally, one of the primary reasons for the growth of the HRD technomancer's business is the downsizing and outsourcing of internal training and development resources. It is a fact of reality that not all of those displaced by technology have the skills and ability to take new positions among the ranks of the technomancers. Many will take early retirement, attempt to become consultants in a diminishing non-technical market, or be forced to accept jobs in other occupations; often at wages up to 40% less than they previously enjoyed (Rifkin, 1995). This unfortunate fact mirrors the technological displacement of workers in other areas of the economy. Certainly, new jobs are being created. The continuing trend, however, is toward a dual system of a relative few very highly skilled jobs at high pay and a great number of low to moderately skilled service jobs for low pay. Other social forces may address this problem by reducing the length of the work week from forty to thirty or twenty hours, or by providing a guaranteed minimum wage and expanding the "social economy" (Rifkin, 1995). The likelihood is high, however, that even the professional work of HRD specialists will not be immune to replacement by technology. Retraining and continuous, lifelong learning are not just watchwords for blue collar employees. HRD practitioners must continually gain new skills to stay on the cutting edge and to continue to add value to their organizations and clients.

Holistic Human Developers. Technology may bring people together or increase their isolation from one another. Business-education partnerships, corporate mergers, advancing technology, and ecological science make us more aware that we live in interconnected systems. This awareness forces people to recognize that there are parallels between the systems of technology with which they work and the systems of society, community, work, and family within which they live. Family and free time are becoming important factors in career planning. Government and business organizations promote lifelong learning for both organizational and individual health and development. Human resource development professionals lead more seminars on creativity, humor, and stress management than ever before. The boundaries between home, work, school, and community have begun to blur. In this new environment the skilled HRD practitioner with a holistic perspective of human development will become more valuable.

Human resource development can be said to be a "process of developing or unleashing expertise for the purpose of improving performance" (University of Minnesota, 1994). We can expect to see this definition pushed a step further, to include two new terms: human potential and human life. The future definition could then become "a process of developing or unleashing human potential for the purpose of improving human life." HRD professionals will do more than train or facilitate; they will help people unleash their own potential to improve their lives.

Trends toward increased use of executive coaching support this conclusion. Not only are executive coaches providing leadership mirroring and career development coaching, but they are also helping execs to balance work and family roles, to find ways to maintain physical and emotional fitness, and to balance community, organizational, and employee stakeholder interests. Many executive coaches contract with their clients to develop the whole person. This holistic perspective can be extended to other HRD activities. Where trainers previously facilitated learning in specific task areas, they are increasingly becoming coaches and advisors to first line managers and supervisors who are taking over the direct skill-building role for their employees. HRD experts in the organization development arena are bringing in more stakeholders to participate in change processes, with the goal being a greater range of options, better information, and a broader base of support for collaborative decision making and implementation (Dannemiller & Jacobs, 1992; Weisbord, 1995). These are a few of the examples that suggest movement toward a broader, more holistic perspective of human resource development.

Eventually, some writers argue, the term "human resource" will be obsolete (Harkins, 1996). People will no longer be seen as resources, but as partners in a collective activity. The objective will be to develop the whole person, the whole group, the whole organization, the whole community in order to solve problems and to unleash the greatest possible potential of the participating people or systems. Many of our present organizations are at the verge of a transition from HRD activities directed at specific business goals to using HRD expertise to unleash the unknown potential of people and groups; and counting on the results to be beneficial to their organizations. It is the serendipitous wonder of human potential that holistic human developers can offer to their organizations and clients in the future. In the area of human development, the frontiers are still beyond us, waiting for us to explore and chart them.

Summary

Changes are coming that will force HRD practitioners to make choices between a specialization in technology and a holistic human development skill set. Where the categories of work in the field have been previously divided by content area (training, OD, career development), the new paths will also differ categorically by method (technology-delivered, coaching, team facilitation). The content of the HRD field will certainly change somewhat, but the trends suggest that it is the method of the HRD process that will change the most. Old development techniques will be abandoned in favor of more effective, lower cost, and lower overhead approaches.

Technology and the competitive environment are driving these changes. Executives expect more measurable results from their HRD experts. In order to gain credibility with senior executives, HRD practitioners are having to learn how to evaluate and report the real costs and benefits of their work. In advanced organizations, the HRD professionals who have mastered this skill have been given the leeway to pursue greater holistic development efforts. They have gained this permission by giving top management the confidence that HRD will be able to continuously support their organizations' goals and strategic activities. The technomancer's methods appeal to the cost-conscious group, and the holistic human developer's methods appeal to the executives that have come to view HRD as a way to unlock the competitive advantage of people growing and doing what they love. Either way, there are many new opportunities for human resource development professionals. Perhaps the best of both options will be open to skilled HRD practitioners who combine the two. The only way to fail will be to keep doing just what has always been done before.

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Current and Future Topics in Human Resource Development: Linking Research With Practitioner Needs

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Academics of any discipline are often accused of being out of touch by the practitioners of that discipline. While academics work to create knowledge that will improve practice, practitioners often view academics as abstract, theoretical, of little use in their world (Watkins, 1994). This distancing of academia from practice is generally enlarged when the discipline is experiencing rapid changes. The newly developing field of Human Resource Development (HRD) is currently undergoing such turbulent times (Nordquist, 1995; Rothwell & Kazanas, 1992). With this transformation comes a valuable opportunity and an urgent mandate for HRD to meet decisive business challenges (Yeung, 1994). There is significant debate as to what HRD of the future will look like (ASTD, 1994; Gilley & Coffern, 1994; Peery & Salem, 1993). The purpose of the study was to determine current and future research needs within the field of Human Resource Development. The expected outcome of this study was a closer link between academic research and practitioner needs and the building of a practical basis for future research studies within the field of HRD.

Academics need to conduct research that solves the urgent HRD problems of practitioners in organizations--useful research, which blends and optimizes the dual vantage points (Watkins, 1994). It is important to note that some academics fear that if research becomes involved in solving only particular business problems, insights will be relevant only to those particular settings and will not contribute to general knowledge (Senge, 1993). It is our concern that significant research opportunities may be missed due to the rapid changes associated with the relative newness and uncertainty of the HRD field.

The main task of this study was to identify "hot topics" in HRD both from the academic and practitioner viewpoints. Additionally, the study sought to identify both current topics and future topics. Two research questions guided this study :

1. *What HRD topics are currently being published and discussed?*
2. *What topics do HRD professionals believe need additional research to benefit the future of HRD?*

If research is carried out in a disjunct manner from actual practice, what level of impact or importance can it truly have to the field of HRD as a whole? Academics must be in tune with practitioner needs to design relevant and applicable studies (Jacobs, 1996). With our fast-paced and ever-changing society, it is becoming increasingly important that academics and practitioners learn to effectively and efficiently communicate ideas and concerns.

Method

Research Design A multiple method design was utilized which included four data collection methods. First, a systematic topic search in HRD academic and practitioner journals was performed to determine which HRD topics are currently being published. Next, a topic search in HRD-related conference proceedings was performed to further identify which HRD topics are being presented and discussed. Then, topics covered in several HRD-related listserves were tracked to identify areas that are currently being discussed by HRD professionals. Finally, these reviews provided the foundation for a survey of HRD professionals' opinions regarding topics in need of additional research to benefit the future of HRD.

Information Sources Because the research design of this study involved multiple methods, four different information sources were examined: journals, conference proceedings, listserves, and HRD professionals. Journals, conference proceedings and listserves were chosen as the most

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appropriate source to determine HRD topics that are currently being written about and discussed. HRD professionals were chosen as the primary information source to determine future research needs.

Journals. Journals were selected based on a study entitled "Answering the HRD Research Maze" which was conducted by Leach et. al. (1993). This study included refereed and non-refereed journals, as well as practitioner-focused journals. Two HRD professionals from the University of Illinois who have been in the field for many years and who read HRD journals regularly were chosen to review the journals listed in this study and asked to identify the most appropriate journals to review. This list included nine journals, as follows: Journal of Adult Education, HRD Quarterly, New Directions in Adult and Continuing Education, Journal of Vocational Education Research, Journal of Continuing and Higher Education, Performance Improvement Quarterly, International Journal of Education Research, Training & Development Journal, and Training Magazine. A table of contents and an abstract of every article published between January 1, 1993 and September 30, 1995 by each of the nine journals was acquired from the University of Illinois library database.

Conference Proceedings. The proceedings from the 1995 and 1996 conferences of three major HRD-related professional associations were reviewed. The three associations were: the American Society for Training and Development (ASTD), the Academy of Human Resources Development (AHRD) and the International Society for Performance Improvement (ISPI).

Listserves. Topics covered by active participants in three HRD-related listserves were tracked for a 25 working day period. The listserves included TRDEV-L (Training and Development), HRD-L (Human Resource Development), and VOCNET (Vocational Education). TRDEV-L was reviewed from November 6, 1995 to December 8, 1995. HRD-L was reviewed from November 30, 1995 to January 5, 1996. VOCNET was reviewed from December 4, 1995 to December 21, 1995 and January 4, 1996 to January 22, 1996.

HRD Professionals. The population of the survey was defined as HRD professionals, both academics and practitioners, working in the field. A list of all current TRDEV-L listserve subscribers as of February 7, 1996, was obtained to determine the opinions of HRD professionals in regard to future trends. TRDEV-L appears to be the most active HRD related listserve in terms of the number of messages per day and the number of overall subscribers. Subscribers are primarily people interested in "... a forum for the exchange of information on the training and the development of human resources (Lin , 1996).

Instrumentation Content analysis matrices and a questionnaire were used as data collection instruments in this study. The matrices were developed to record topics identified in journals, conference proceedings, and listserves. The structure for the matrices was the same across the three information sources. The combination of topics identified through the resulting three matrices served as the basis for designing the questionnaire used to survey HRD professionals about their expectations of future HRD research needs.

Content Analysis Matrices. The matrix for journals consisted of the journal titles listed across the X-axis. Initially, the Y-axis contained no information. However, as new topics were identified through the journal article review, they were added to the Y-axis. The journal matrix provided a basic framework for organizing data collected from the remaining information sources. The matrix for the conference proceedings listed each conference by association and year on the X-axis and the topics identified through the journal review on the Y-axis. As topics unique to conference proceedings were identified, they were added to the Y-axis.

Survey Questionnaire. A questionnaire to survey HRD professionals was developed based on the topics listed in the journal, conference proceeding, and listserve review matrices. This questionnaire included a brief introduction to the study, as well as explicit instructions for completing the instrument. Following the instruction section, the questionnaire included a categorical listing of topics based on the matrices established through the journal, conference proceeding, and listserve reviews. The four primary categories that topics were assigned to included: learning topics, instruction topics, organizational topics and topics related to the general field of HRD. Respondents were asked to mark all topics or add any topics they felt needed further research in the next five years. The instrument was pilot-tested on 30 randomly selected TRDEV-L listserve subscribers, who were not included in data collection. Changes based on the pilot-tests were made to the instrument prior to final electronic mailing.

Data Collection Data collection was conducted through two major steps: 1) coding of journals, listserves and conference proceedings, and 2) a survey of HRD professionals. Journals were reviewed first because they were expected to provide the greatest breadth of topics; thus, establishing the broadest framework for the matrices used in collecting conference proceedings and listserve data. The two primary researchers involved in this study were responsible for assigning all topical codes to journal articles, listserves and conference proceedings.

Coding Procedure for Journals, Conferences and Listserves. The first five journals were analyzed simultaneously by the researchers to reach consensus on the scope, meaning and code of each topic. The remaining four journals, listserve printouts and conference proceedings were coded independently by each researcher. Each item (i.e., journal article, conference proceeding or listserve message) was read and content analyzed to determine its primary focus. Many items contained specific descriptors that helped to determine the topic(s) covered.

Article abstracts contained subjects descriptors used to classify the article in the library database. These descriptors were helpful in identifying the primary topic of the article. Similarly, AHRD and ASTD conference presentations, activities, and workshops contained topic descriptors to help conference attendees select desired activities. ISPI conference proceedings did not contain such organizers. Listserve printouts contained a subject header at the top of each message that helped to identify the primary topic(s) covered by the author.

Inter-rater reliability for the coding process was determined by having two researchers analyze and code 200 items contained in the 1995 AHRD conference proceedings. One researcher assigned a total of 234 topic codes, while the other researcher assigned a total of 236 topic codes. This resulted in 16 overall discrepancies. Therefore, inter-rater reliability was found to be at 93% (16 discrepancies / 236 topic codes) using the above described coding process.

Survey of HRD Professionals. The survey portion of this searched for perceptions of academics and practitioners about future HRD research needs. A questionnaire was designed based on the categories and topics identified through the first part of this study. Respondents were asked through this internet distributed survey instruments to mark all topics they felt needed further research over the next five years. An "other" section was included that allowed participants to add any topics they felt were missing. Respondents were also asked to mark their status as either employed by an organization, independent consultant, academic, student, or other. The questionnaire was sent via e-mail to each of the 2755 TRDEV-L listserve subscribers between February 13 and February 15,1996. Respondent e-mail addresses were clustered into groups of five to seven to make the questionnaire seem more personalized; thereby, increasing the response rate. As an incentive to complete the questionnaire, respondents were promised an executive summary of the results.

Data Analysis Data analysis was conducted through four steps. First, topics identified through the journal review were placed into four categories according to common themes. Second, frequencies were computed for each topic. Third, topics and categories were ranked by frequency for each information source. Lastly, rankings for each information source were correlated.

Categorization of Topics. The journal review matrix was analyzed to identify common themes that emerged from the identified topics. These common themes served as category headings to provide a logical structure for arranging the topics. Four category headings were identified: learning-related topics, instructional topics, organizational topics, and topics related to the field of Human Resource Development. Learning-related topics specifically addressed learner needs or learner characteristics. Instruction-related topics were more relevant to the instructor's needs and responsibilities. Organizational topics dealt with topics and issues facing the whole organization, which HRD must support. The Field of HRD category included topics specific to the HRD function as a discipline and not necessarily organizational wide issues. This categorical outline served as the structure for analyzing the remaining information sources.

Frequency Distribution of Topics. A frequency was computed for each topic identified in the journal review based on how many times that topic was listed in each journal. This total was then entered into the journal review matrix under the appropriate journal title and topic name. An aggregate frequency for each topic was computed by adding up the totals for individual journals from the matrix. This aggregate frequency was then divided by the sum total of topics identified through the journal article review and multiplied by 100 resulting in the percent of total for each topic. Finally, the percent of total for each category heading was determined by adding up the percent of total of the topics within that category. This same frequency distribution procedure was then used to analyze to conference, listserve, and survey data; however, the topical frequencies for survey data were further broken down into two categories: academic and practitioner.

Ranking of Topics. Within each information source, topics were ranked in order from highest to lowest frequency. The data coding procedure resulted in 43 major HRD-related topics emerging from the first three information sources. Thus, topics were ranked in order of importance from 1 to 43 based on highest frequency. Topics with the same frequency - ties - were handled by averaging the rank of the tied topics and assigning this average to all of the tied topics in question. Categories were ranked by averaging the ranks of all topics contained within each category heading. The category containing the topics with the lowest average rank was ranked first.

Cross-source Relationships. An analysis of journal reviews, listserve activity, and conference proceedings was conducted to determine the consistency among information sources used to determine current 'hot' topics. The extent of agreement on the ranking of topics among current information sources was measured by generating a Spearman Rank Correlation Coefficient for each relationship. The relationship between academic and practitioner rankings was explored to determine the extent of agreement between the two groups on future research needs.

Findings

The analysis resulted in the emergence of 43 HRD-related topics. To determine the topics currently being published and discussed, 4028 codes were assigned through the review of journal articles, conference proceedings, and listserve discussions. Furthermore, through the survey of HRD professionals, 311 individuals provided 6246 responses indicating which of the 43 topics needed the most future research. The data are presented with respect to the two major research questions of this study.

Research Question #1: What HRD Topics are Currently Being Discussed and Published?

Journal articles, conference proceedings and listserve discussions served as the three primary information sources to address this research question. In all, 1144 journal articles were examined and assigned 1446 topic codes, 1198 conference presentations were assigned 1434 topic codes and 958 individuals contributed listserve messages resulting in 1148 topic codes. Approximately, 5% of all topics resulted from unclear *items* that needed to be examined jointly by the researchers in order to assign the proper codes. Organizational topics were considered most important based on the average rank of the categories across the three information sources (see Table 1). In particular, journal and conference reviews resulted in organizational topics ranking the highest, while the listserve review showed organizational topics as the second highest ranked category. Overall, the average ranking of categories showed instructional topics top be the second most important category with topics related to learning and the field of HRD ranking equally and lowest. There was little agreement among sources as to the ranking of instructional topics; although, there was general agreement that topics related to the general field of HRD ranked lowest.

Learning. The learning category contained eight topics and was the smallest of the categories in this study. A greater number of journal articles contained learning-related topics making up 15.91% of the total topics, in contrast to conference proceedings and listserves wherein only 9.90% of the proceedings and 9.71% of the listserve discussions contained learning-related topics. Correspondingly, the average rank of topics covered in the journal article review was 20.19. Again, this differed from listserve (26.44) conference and proceeding (27.25) average ranks. The top three learning-related topics based on the average rank of the three information sources are: Cognitive Processes of Learners, Assessing Learner Characteristics and Experiential Learning.

Table 1. Average Ranking of Categories by Information Source

Category	Journals, Conferences & Listserves	Survey Results
Learning	3.33	**1.5**
Instruction	2.00	**1.5**
Organizational Topics	**1.33**	3
Field of HRD	3.33	4

Instruction. The instruction category consisted of ten topics. Listserve reviews reflected the greatest activity with 36.74% of listserve discussions containing instructional topics. In contrast, instructional topics covered in conference presentations and journal articles only made up 31.24% and 28.49% of the total topics, respectively. The top three topics contained in the instruction category are: Instructional Technologies, Instructional Techniques and Instructional Design.

Organizational Topics. The organizational topics category consisted of eleven topics. More journal articles (32.64%) and conferences presentations (34.24%) contained organization-specific HRD topics than listserves wherein only 21.92% of discussions reviewed contained organizational topics. Correspondingly, the average ranking of listserve organizational topics was lower at 21.32 than journal articles (17.95) and conference presentations (16.27). The top three organizational topics are: Team Development, Linking HRD to Strategy, and Diversity.

Field of HRD. The category of topics related to the field of HRD consisted of 14 topics and was thereby the largest category of our study. Although this category contained the most topics, it was not highest ranked category of our study (see Table 1). A portion, 26.51%, of listserve discussions contained references to topics in the field of HRD, which is more than conference proceedings (23.50%) and journal articles (21.44%) (see Table 5). Correspondingly, the average ranking of field of HRD topics covered in the listserve review is 22.43, which is higher than conferences (25.68) and journals (26.68). The top three topics related to the field of HRD are: International HRD Issues, Management Development Programs, and Career Development Issues.

Source Comparisons The three information sources were similar in the importance placed on the top ranked topics currently being published and discussed. A Spearman Rank Correlation was conducted on the topical rankings of the three sources to determine the extent of agreement between the three sources. These strong correlations indicate overall agreement between information sources addressing what is currently being published and discussed.

Research Question #2: What Topics do HRD Professionals Believe need Additional Research to Benefit the Future of HRD?

A survey of training and development professionals served as the primary information source for this research question. Responses from TRDEV-L subscribers were received over a two week period from February 13, 1996 to March 30, 1996. A return rate of 11.29% resulted from 311 returned instruments. Of these 311 respondents, 243 persons (78.14%) indicated that they were practitioners. These 243 individuals provided 4905 responses as to which HRD topics they felt are going to be most important over the next 5 years resulting in an average of 20.19 responses per individual. The remaining 68 respondents (21.86%) indicated that their primary position was academic in nature. These 68 individuals provided 1341 responses resulting in an average of 19.72 responses per academic .

Table 2. Ten Highest Ranked Topics according to Research Questions

Research Question #1: What HRD topics are currently being published and discussed?		Research Question #2: What topics do HRD professionals believe need additional research to benefit the future of HRD?	
Instructional Technologies	1	Self-directed Learning	1
Instructional Techniques	2	Training Transfer	2
Instructional Design	3	Distance Education	3
Team Development	4	**Instructional Technologies**	4
Linking HRD to Strategy	5	Learner/Performance Assessmnt	5
Diversity	6	**Linking HRD to Strategy**	6
International HRD Issues	7	Learning Organizations	7
Cognitive Processes of Learners	8	HRD Return on Investment	8
Management Development Programs	9	Mentoring	9
Organizational Development	10	Experiential Learning	10

Based on the average rank of topics within each category, practitioners indicated that instruction-related topics were slightly more important to the future of HRD than learning-related topics. Organizational topics followed with topics related to the field of HRD ranking the lowest. Academics felt that topics related to learning were most important based on the average rank of each topic within each category. Instruction-related topics followed fairly closely in second with organizational topics and topics related to the field of HRD being ranked much lower. Overall, learning and instruction related topics were ranked considerably higher by both groups than either of the other categorical topics.

Learning. At 24.03% of the total responses, a slightly greater proportion of academic responses indicated that learning-related topics were important to the future of HRD than practitioner responses which accounted for 22.70% of total responses. Correspondingly, the average rank of academics responses was slightly higher at 12.63 compared to the average rank of 14.88 of practitioner responses. The top three topics for both groups were the same, although they ranked differently on the overall 43 topic ranking scale. The top three learning topics are: Self-Directed Learning, Training Transfer, and Experiential Learning.

Instruction. Approximately the same proportion of responses were assigned to the instruction category by practitioners (28.04%) and academics (27.47%) (see Table 9). There was also not much difference in the average rank of topics within this category with practitioner responses averaging 14.85 and academics averaging 15.75. The highest ranked topics were not identical across practitioners and academics; however, there was agreement as to what the top four topics of the future should be. The top four topics related to future research needs of instruction are: Distance Education, Instructional Technologies, Learner/Performance Assessment, and Mentoring.

Organizational Topics. A similar percentage of responses were assigned to the organizational topics category by practitioners (23.87%) and academics (23.75%). The average rank of topics within this category was similar, as well - practitioners (23.68) and academics (23.82). However, there was little agreement as to the highest ranked topics in this category. Overall, the top two organizational topics needing future research are: Linking HRD to Strategy and Learning Organizations.

Field of HRD. A similar percentage of responses were assigned to the Field of HRD category with practitioner responses resulting in 25.39% and academic responses resulting in 24.75% of total responses for each group. Average ranking topics was also similar at 29.86 for practitioners and 30.39 for academics. There was limited agreement as to the highest ranked topics within the field of HRD category. Practitioners and academics agreed that "HRD Return on Investment" was the highest ranked topic within this category.

Cross-source Comparison. Academics and practitioners were very similar in their perceptions of the most important topics in the future of the HRD field. A Spearman Rank Correlation was run to ascertain the extent of (dis)agreement in topical rankings between these two groups. The Spearman Rank Coefficient was found to be r=0.8596 indicating a fairly strong extent of agreement between the rankings of academics and practitioners.

Discussion

The findings of this study suggest several discussion areas: extent of agreement within research questions; current and future HRD perspectives; and future 'hot' topics within HRD.

Extent of Agreement within Research Questions A strong extent of agreement exists among the three information sources addressing HRD topics currently being published and discussed. This strong extent of agreement could arise from similarity among the types of people publishing journal articles, arranging conferences, and taking part in listserve discussions. There may be a cycle that occurs where what people read, is what people tend to present, which may also be what people are inclined to discuss. However, this strong extent of agreement may actually appear because the topics identified are truly those which HRD professionals currently need to know about in order to effectively perform their jobs.

The Spearman correlation coefficient relating academic and practitioner rankings was found to be at r=.86, suggesting that HRD professionals are in close agreement as to which topics need more research over the next five years to benefit the field of HRD. This runs contrary to what one might expect to be an outcome of this study; that academic and practitioners would *not* be in agreement on future HRD research needs because of the turbulent nature of this rapidly changing field.

The findings show almost no correlation between the three current information sources and the survey addressing future research needs. The near zero correlations found between journals/listserves, and HRD professionals indicates that HRD topics currently being published and discussed are very different from HRD research needs of the future.

Current and Future HRD Perspectives HRD topics specifically related to organizational-wide concerns are *currently* those being published and discussed most often. This seems logical as many organizations have experienced drastic reorganization and change in the 1990's.

Organizations of the future will most likely continue to reorganize and restructure to meet changing market conditions (Nolan & Crosan, 1995; Kanter, et. al., 1992). Like other support functions, HRD has had to embrace, manage, and sustain these changes. However, organizational topics are not what HRD professionals see as the primary focus for the future of HRD research.

The findings indicate that topics related to learning and instruction will be the most important HRD topics for *future* research over the next five years. This shift in focus from organizational topics to learning and instruction-related topics may stem from the fact that as changes and reorganization have occurred, organizations have recognized the tremendous impact such transformations have on employees. Now more than ever organizations are realizing that to survive and remain competitive, they need to change their focus toward employee development needs. The predicted emphasis on additional research for learning and instruction-related topics suggests that HRD professionals have recognized the need to refocus HRD activities on employee needs by providing high-quality, learner-focused instruction.

Table 2, which compares the ten highest ranked topics according to research question, indicates a notable difference between the most important HRD topics that are currently being published and discussed and the most important HRD topics requiring research in the future. While the top three topics currently being published and discussed are related to instruction, 4 of the remaining top 10 are organizational topics. These rankings also suggest a strong HRD focus toward instruction and learning, but indicate that HRD activities being published and discussed are strongly influenced by organizational problems. In contrast, seven of the top 10 "hot" topics needing future research will be instruction or learning-focused, while only 2 are organizational topics. Thus, learning and instructional topics are growing in importance within the field. In particular, self-directed learning, training transfer, and distance education were ranked relatively low when looking at current information sources; however, HRD professionals indicated a strong need to focus research on these topics in the future.

Future 'Hot' Topics in HRD The ten "hot" are included in table 2. Both academics and practitioners alike marked these topics as being the most important topics to research over the next five years

Instructional Technologies is the only instruction/learning topic listed in both top 10 rankings. This indicates the growing importance of this newly emerging topic within the field HRD. Technology is changing the way business is being conducted worldwide, and HRD is not immune to such changes. While information is currently being published and discussed about instructional technologies, more research will need to be conducted before this topic is fully understood and effectively utilized.

Another topic that is currently seen as important and that will continue to be important for future research is Linking HRD to Strategy; thus, indicating that HRD will continue to require close relationships with other functional areas to stay abreast of business strategy. In fact, HRD must stay closely attuned to organizational changes in the future to become and remain a strategic partner in business (Rothwell & Kazanas, 1994).

The topics targeted at addressing future research needs may indicate that in the future HRD should: allow employees to take a greater part in developing themselves on the job, provide systems for continuous learning, ensure that training effectively transfers to the job, make a variety of training mediums available to learners, and stay closely linked to business strategy.

Implications What impact will these findings have on the field of HRD and HRD professionals? Three area that are potentially affected by this study are: designing research, sharing research, and developing new ways of communicating research. As a result of this study researchers, journal editors, and conference coordinators, are provided a strong foundation for designing future research. Authors, conference coordinators, listserve managers, and organizations are provided a picture of the important topics they need to address in the future. Ultimately, these groups must share the research that is conducted on the "hot" topics uncovered in this study in order to positively influence how all HRD professionals perform their jobs in the future. This sharing of information will undeniably have positive effects on the field of HRD as well. Not only will designing and sharing research be important, but also new ways of communicating may be drawn from the study. As HRD professionals discover new communication media, they will inevitably find more advanced ways to use these media, such as listserves and the World Wide Web, to design, conduct, and ultimately communicate research findings, ideas, and concerns.

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Re-searching Human Resource Development: Societal Functions of Training and Education

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The globalization of work and more recent advances in the soft and hard sciences are changing the role of human resource development (HRD). Those involved in training and development know that the emerging linkages between vocational education and human resource development offer opportunity to re-construct our view of and approach to these complementary communities of practice. As the societal institution responsible for the provision of leading activities, the Academy must re-think its view of human and organizational development and respond accordingly.

In the early 1980's, the Government of Saskatchewan provided funding for the creation of a Vocational/Technical Education degree program at the University of Regina, Regina, Saskatchewan, Canada. The *voc/tech* program was established to provide professional development opportunities and degrees for instructors employed in the province's publicly-funded community colleges and technical institutes. The initial participation profile showed that college and institute personnel comprised some 80% of the enrolment and professionals employed in various community-based and business and industry human resource development (HRD) functions comprised the remaining 20%.

By 1995, the participant profile had undergone a marked shift as the college and institute participation rate was approaching 20% and the participation rate for members of other HRD communities of practice had shifted to the 80% category. The new majority of participants were employed in training and development roles in police agencies, municipal fire service, community-based adult education organizations, public health agencies, financial institutions, oil refineries, public utilities, and other private and public sector communities of practice. Whenever they discussed their choice of voc/tech as a degree option, many of these new participants shared a view that they had enrolled in the degree simply because it was the best fit the university offered for HR practitioners. The conversation typically ended with participants saying: "People in business and industry don't see vocational/technical education as being applicable to the field of human resource development, and employers don't connect voc/tech with HR when they are hiring or promoting people. Why don't you offer a degree that would better serve the needs that are out there? You would get more participation and the university would have a relevant program for HR people who are dealing with the changing nature of work".

Concurrent with these winds of change, faculty members had been monitoring emerging trends in the field of human resource development (e.g. Kaeter, 1995; Leitzel & Vogler, 1995), especially as they relate to vocational/technical education (e.g. Holton & Trott, 1996). The faculty also recognized that in this socio-historical time, when workplaces are embedded in a knowledge-age economy, those responsible for the provision of activities that lead human resource development are faced with unprecedented challenges and opportunities, especially in the field of adult vocational education. To capture these opportunities, however, researchers and educators involved in any re-design initiative must respond to the call for a more robust view of how occupational competence is developed, and the role of training and education in leading it (e.g. Barnet & Cavanagh, 1994; Davidow & Malone, 1992; Hecksher & Donnellon, 1994; Johansen & Swigart, 1994; Nonaka & Takeuchi, 1995). In the Fall-Winter of 1995, the Department of Vocational/Technical Education submitted a proposal to the Faculty of Education to re-visit the currency of its graduate and undergraduate programs.

The key thrusts of the project were to establish a steering committee of senior business and industry HR professionals to guide the field research aspects of the project, to recruit a research assistant,

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and to secure participation from the Faculty of Administration. The latter step was seen as essential as turf wars tend to emerge when Faculties perceive that their traditional hold on certain aspects of the Academy are under siege. Recognizing that there were distinct, but not separate, linkages between the mandates of the Faculty of Education and the Faculty of Administration in terms of human resource development vs. human resource management, it was felt that there was merit in having both Faculties involved in researching, developing, and delivering the new degree/s. To facilitate the process, members from the Faculty of Administration's graduate program office and the Faculty of Education's business education teacher education stream agreed to join the project team. The research assistant was hired and the project was underway by March, 1996, under the direction of the Department of Vocational/Technical Education.

Research Questions

The key questions for this research were the following:

1. How should adult vocational educators and their communities of practice respond to emerging trends in human resource development?
2. What is the function of, and the relationship between, official training, which is generally understood as being provided by the training department, and organic training, which is generally understood as being provided by competent pracitioners on-the-job? What is the connection between official and organic training? And how can organizations which are involved in the development of human resources better understand the functioning of official and organic training and re-shape their practice to include both streams in their overall approach to human resource development?
3. What is the relationship between the following two processes: 1. The development of knowledge-ability in a community of practice through the acquisition of fundamental skills and sensitivities and learning to understand them through reflection in various societal settings other than education; and, 2. the development of knowledge-ability in a community of practice through the acquisition of conceptual tools for reflection and learning to more fully understand a community's practice through reflection in the education setting?

A fundamental assumption under which we have been operating is that all development is preceded by the provision of leading activities initially provided by organic and official trainers, and subsequently provided by educators in the ongoing processes of re-producing an organization's practice and its membership; in other words, nurturing human resource development through vocational training and education.

Methodology

The research methodology was based on two primary assumptions and comprised four key research initiatives. The two assumptions were: 1. That adult vocational education has an opportunity for re-newel through the field of human resource development; and, 2. that the development of occupational competence is a two-tiered process that subsumes the acquisition of skills as the primary process and learning through reflection in order to gain an understanding as an ancillary, but complementary, process. The four key initiatives were: 1. A series of focus group sessions of HR practitioners in the City of Regina were held to solicit input into the programs' framework and course content; 2. a literature search was carried out into emerging trends in training and development, especially between HRD and voc/tech; 3. interviews were held with senior HR persons in a number of Canadian universities and corporations to research current trends in Canada's HR communities of practice; and, 4. a search for a theoretical underpinning for the new program was conducted. The curriculum re-construction project's overarching aim was to develop a re-newed program that would more adequately reflect the changing role of vocational/technical educators in the university milieu, particularly in terms of the emerging linkages between vocational/technical education and human resource development (e.g. Holton & Trott, 1996).

Based on an assumption that both fields were inextricably linked, the research team established two key objectives: 1. To re-construct the voc/tech curriculum in the form of undergraduate and graduate programs having an HRD focus; and, 2. to identify and instantiate a view of development which would serve as the theoretical underpinning for the re-constructed programs. The latter objective was seen as critical to the success of the project because the team wanted to emerge with both an appropriate program framework and a theoretical/philosophical underpinning which would serve to guide the development of the program and its core courses. To use a building construction metaphor, we wanted to have a sound footing which would support the rest of the program's foundations. Another intent was that the theoretical underpinning would better reflect the development process as it occurs in the day-to-day work of HR professionals and in the communities of practice served by the Department of Vocational/Technical Education.

After an initial research of the literature, we decided to focus on recent advances in cultural psychology, particularly in the situated activity stream, with a view to adopting it as the theoretical approach to program re-development. The methodology employed for a theoretical underpinning for the program was that of a conceptual analysis through literature review and grounded theory, and the research team has been analysing and extracting key concepts and themes from current research and literature in the field of human resource development. To date, the focus group field research is completed, the literature research into linkages between voc/tech and HR trends is complete, research into trends in the Canadian HR environment is near completion, and the team is still in the process of instantiating the theoretical framework. It is to this last aim that the remainder of this paper is directed.

The Search for a Theoretical Underpinning

New understandings of the relationship between theory and practice have emerged to alter our notion of development and how it is nurtured. Conventional approaches to training and education, as they relate to the development of occupational competence, tend to be founded on views of development that emphasize learning as a primary process which is supported by training and education processes that focus on learning; however, much of the learning theory employed in the design and delivery of training and education programs and services is under critique as a result of recent advances in the fields of critical sociology (Luhmann, 1995; Habermas 1984, 1987), cultural psychology (Bruner, 1990, 1996; Chaiklin & Lave, 1993; Cole, 1996; Gee, 1992; Lave & Wenger, 1991; Wertsch, 1985, 1991; Wertsch, del Rio, & Alverez, 1995), human evolution (Eder, 1996), neurobiology (Edelman, 1989), organizational development (Barnet & Cavanagh, 1994; Davidow & Malone 1992; Heckscher & Donnellon, 1994; Johansen & Swigart, 1994; Nonaka & Takeuchi, 1995), semiotics (Bakhtin, 1981) and sociolinguistics (Gee, 1992). These researches support new understandings and serve as bases for recasting views of human development, approaches to human resource development, and related roles of training and education associated with the aims of this research project.

Given the Department of Vocational/Technical Education's goal of identifying a sound *footing* for its new program, the focus of this project research activity has been on the construction and instantiation of a conceptual scheme for the identification and classification of structures and processes for human resource development. As noted, the scheme is grounded in the notion of situated activity, a stream of cultural psychology concerned with the study of societally significant activities that incorporates findings drawn from activity theory, critical psychology, ecological psychology, cognitive anthropology, and ethnomethodologies that are congruent with the foregoing fields of study (Chaiklin & Lave, 1993). The scheme is meant to capture how these theoretical underpinnings can be utilized as a basis for connecting training and education activities that contribute to the process of human resource development at societal, institutional, organizational, and departmental levels.

Based on our work to date, the following overviews our re-search into situated activity and the potential it holds for linking the fields and re-shaping our view of vocational/technical education and human resource development. Initially we portray the scheme in terms of the nature of the development of occupational competence according to advances in the physical and social sciences and the humanities. Then we explore processes, structures, and outcomes for training and education at the societal, institutional, organizational, and departmental levels. Next we comment on implications for contributions by training and education to organizations' human resource development endeavours, and finally on our progress in instantiating the scheme for use by the department of Vocational/Technical Education.

The Nature of Development

The development of occupational competence is seen to be a two-tiered process of originally acquiring fundamental or advanced skills and sensitivities, and subsequently learning to understand them through reflection in what can be viewed as an iterative action/reflection rhythm. In this process of development, practice and theory are thought to, over time, mutually modify each other, and intertwine and produce a new emergent. In contrast to the conventional view of developing competence where theory precedes and drives practice, theory on this view is seen as a tool to reflect on practice after the fact, in search of more efficient and effective practice, and all development is seen to be preceded by instruction in the form of the provision of leading activities. On this non-conventional view of development, acquisition is seen as a process of acquiring skills and sensitivities subconsciously by exposure to models and a process of trial and error, without a process of formal teaching. Learning, on the other hand, is, as Gee (1989) advocates, a process of consciously reflecting upon practice in the context of leading activities provided by an instructor, or through solitary reflection, in search of understanding for instrumental purposes or problem-solving, and metaknowledge for purposes of critique, or problem-finding. Our aim in this research initiative was to, as Knodt (1995) suggests, exit with a theoretical footing which serves to inform us about what we are already doing; in our case, to develop an incipient metanarrative for what we have been practising in the Academy.

Wertsch's (1985, 1991) reconstruction of Vygotsky's view of development was identified as a basis for re-newing the program's educational processes, structures and outcomes. On this view, the structure in which the process of acquisition occurs, referred to as the work site for development, is a psycho-social space within which employees enact the practice of a department. The structure in which the process of learning occurs, referred to as the formal site for development, is a psycho-social space within which employees engage in learning by reflecting on their experiences in the work site, in search of understanding. The development of the organization and its members is thought to be enhanced by their being able to freely migrate back and forth between these sites for development, and the provision of activities --instruction-- that lead the development of occupational competence in them. Instruction within these sites for development can take the form of either training within an organization embedded in a societal institution other than education, such as business and industry, the military, health, and government. Instruction can also take the form of education within a school situated within the education societal institution. In the former situation, skills, sensitivities and understanding are oriented toward organizational efficiency and problem-solving. In the latter situation, work and formal sites serve for the acquisition of conceptual tools for reflection oriented to understanding effectiveness from an institutional and societal standpoint and a problem-finding perspective.

Leading on from the views of Gee and Wertsch, Lave and Wenger (1991) advanced a view of development that holds significant merit for the aims of this research. These researchers propose that instruction, in the form of training, is carried out by old-timers who are referred to as full members of a department or community of practice, and by newcomers who are referred to as legitimate peripheral members, enacting a configuration of social roles--*status subordinate, learning practitioner, sole responsible agent for a "minor" part of the performance*, and *aspiring expert*--that are embedded organically in the day-to-day practice of departments within an organization. Official training is also provided by old-timers in more contrived, official formal sites for development situated either within the organization or in other organizations embedded in a societal institution other than education. From this perspective, trainers are primarily concerned with the provision of activities that lead the acquisition of skills and sensitivities and instrumental understanding --procedural transparency.

From earlier research by Wenger (1990) and later research by Luhmann (1995) it can be seen that instruction, in the form of education, is carried out by full members of communities of practice situated in schools. This proposition was seen to be relevant to our search in that, in the work site, educators nurture the acquisition of conceptual tools by members of organizations embedded in societal institutions who attend educational programs and enact the social role of student. In the formal site for development within the education societal setting, attendees use these conceptual tools acquired in the work site to critique the practice of their respective departments in search of understanding oriented to organizational, institutional, and societal interfaces and effectiveness that makes the implicit cultural beliefs and mores more transparent--cultural transparency.

In his conception of development, Habermas (1984) noted that four forms of human rationality are thought to have evolved over the course of some fifty million years of primate development: The four forms, which Habermas sees as important for gaining an understanding of human development, include somatic intelligence, narrative intelligence, scientific intelligence, and linguistic intelligence. Somatic intelligence is a primordial form of rationality grounded in physiognomic logic that promotes the wellbeing of the species. Referred to as *affect*, it has genetic priority in the development of forms of human intelligence. The affect serves as a primary signalling system and the biological substrate for later to follow forms of rationality, referred to as *intellect*. Somatic intelligence is a prime force operating in work sites for development (Luhmann, 1995).

Narrative intelligence came into being as recently as fifty thousand years ago as part of the early development of human primates when the emergence of language made sensemaking possible in the form of stories grounded in informal logic. In the mid-seventeenth century, scientific intelligence emerged, making possible sense-making in the form of explanation, prediction and control grounded in formal logic and statistics. By the late twentieth century, linguistic intelligence had emerged in the form of an interrogation of language grounded in a combination of formal, informal, and nonformal logics that make it possible to describe our descriptions of reality for purposes of assessing imbalances between the forms of rationality employed and to explicate meaning. These latter three forms of human rationality, or intellect, are the prime forces operating in formal sites for development.

Institutional, Organizational and Departmental Structures, Processes, and Outcomes

Societal institutions, such as business and industry, government, health, the military, and the organizations within them are impelled by imperatives and initiatives that are conceived from on-high, as theory, and actualized on-the-ground, as practice. In order to endure and to prosper, institutions and organizations must maintain the status quo through making procedures more transparent as part of the quest for, and the cost of, efficiency, while, at the same time, transforming the status quo by making cultural ideologies more transparent in a quest for societal and institutional effectiveness. The basic means for accomplishing these societal functions is to continually re-produce the practice and membership of departments that populate organizations (Habermas, 1984, 1987; Wenger 1990). This concept was seen as central to the Department of Vocational/Technical Education's search in that the training and education dynamics of human resource development constitute major factors in the re-production of institutions, organizations, and departments.

In our review of the societal functions of maintaining the status quo while simultaneously transforming it, we decided to employ Wenger's (1990) notion of a department of an organization as a community of practice. We were interested in exploring the community's development and that of its members as it occurs as part and parcel of the re-production of the community's interwoven practice and membership. We were also interested in the relations of a department's members with other departments inside and outside the organization and the societal institution within which they are situated (Wertsch, 1985). Following is an overview of our work to date on this theme and our sense of how the notion of a community of practice fits our program's re-construction and how it can serve in the re-construction of vocational education by connecting it to human resource development.

Reproducing the Practice

Full members of an organization maintain its practice by juryrigging snags that inevitably crop up in the course of its day-to-day activities and capitalizing this trial-and-error pragmatic development that emanates from dealing with the endless exigencies that present themselves in everyday life. Sometimes the persistent problems are dealt with through more formal, *official* training processes by the training department. In most instances, however, development occurs informally as certain old-timers subtly, implicitly, and all but unconsciously provide activities that lead their peers through a process of *organic* training which fosters continuing quantitative change--procedural transparency.

Development also occurs as certain members of a community of practice gain incoherent membership in other communities by aligning, affining and affiliating themselves with those that are ideologically incongruent with their own (Wenger 1990). A member's incoherent membership in these communities brings to bear perspectives that, when mediated, qualitatively alter the practice and foster cultural transparency within their own community of practice and serve as another form of organic training. On occasion, experts from other communities are invited to serve the purpose of official training focused on enhancing procedural transparency, or for purposes of education focused on enhancing cultural transparency.

Reproducing the Membership

As full participants in a community reproduce its practice through engagement in everyday activities, they simultaneously induct and socialize legitimate peripheral members and hence maintain the status quo by replacing full participants that leave. During this organic training process, given the different sociohistorical legacies of experience of newcomers, certain newcomers bring to the fore perspectives gained from previous full and current incoherent membership in communities that are often ideologically incongruent with their own. When these ideological differences are mediated, they become a potentially prolific source of cultural transparency. Here we see the critical impact of the contra-side of organic training upon corporate and personal development. From this point in the research we turned our attention to how those responsible for human resource development endeavours can focus them toward the fulfilment of societal, institutional, organizational, and departmental functions of preserving the status quo while at the same time superseding it with a new and more complex form, especially in re-newing and theorizing our view of vocational education.

Implications for Trainers and Educators

Societal institutional imperatives developed from on-high are reified and communicated to organizations within an institution. In turn, these organizations ideally formulate initiatives that address aspects of the imperatives which, when communicated to other departments within the organization, become normative structures which have been reified for purposes of efficient focus. The necessary tension which arises between the imperatives and initiatives which are conceived and reified from on-high and enacted on-the-ground, is, when mediated, thought to be a pivotal dynamic in the process of societal, institutional, organizational, and departmental development (Habermas, 1984, 1987; Wenger, 1990; Wertsch 1985). The processes and structures of training and education associated with this view of development can serve chief executive officers and managers of human resource development to assess organizations' human resource development endeavours. As a view that is footed in the social construction of knowledge theory that is so germane to organizations operating in knowledge-age economies, it can also serve to inform those responsible for human resource development departments that design and implement training and education activities.

The notions of sites for development, organic and official training and education, and the different forms of human intelligence can be enhanced when linked with the ideas of full, legitimate, and incoherent forms of membership in communities of practice. The linkages make it possible to import and export knowledge between departments, organizations and institutions, and they cast a more robust and en-lightened view of how we can nurture the knowledge-production process and re-new our view of and approach to vocational education.

Given the Academy's concern with producing a global view of development and practitioners' interest in re-producing their own view through exposure to the Academy, our research has led to the following critical dimensions for planning, implementing and assessing human resource development within an organization:

- *robustness of the view of development underpinning a program* Does the view reflect the most recent developments in the social and human sciences, and is the executive group of labour and management behind it?
- *index of incoherent membership* Is there sufficient connection between departments or communities of practice within and without the organization to provide a base for this approach to training and education?

- *quality of organic training* Is there a sufficient corps of old-timers that possess the fascination with their craft and associated commitment to socialize newcomers?
- *quality of official training* Is the training department open to reconstructing the conventional view of development and the training and education associated with it?
- *quality of education and linkage with training* Does quality exist, and does potential exist for partnerships between education and training communities of practice and host organizations?
- *utilization of cyberspace technologies* Is cyberspace virtuosity feasible and available?

The research reported in this paper will be treated in more depth in *A Conceptual Scheme for the Identification* and *Classification of Structures and Processes for Human Resource Development* which are currently under validation through an ethnographic field study with an urban fire service. This validation forms part of the second stage of the curriculum re-construction project underway in the Vocational Technical Education Department of the Faculty of Education, and it is anticipated that the outcomes of stage two will serve to guide the construction of a corporate and employee development program.

We in the Department of Vocational/Technical Education believe that knowledge is always under re-construction, so in this project we decided to investigate how HRD practices are undertaken in the workplace and how knowledge about HRD is or can be re-constructed in an organization that is involved in the ongoing training and education of its membership. We believe that our work will make a contribution to the HRD research community and to our understanding of the processes associated with the development of occupational competence and, thereby, human resource development. The analysis of data to date has produced a framework of courses for new undergraduate and graduate degrees, while an instantiation of the theoretical underpinning is ongoing. The overall outcomes will be available in '97/98.

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For "Best Fit" Training; Measure Employee Learning Style Strengths

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Employees must learn new skills to keep up with the changing technical nature of jobs. Since each employee receives information differently, instructors may find testing an employee's learning style modality to help the outcome of training. One tool that tests an individual's learning modality is the Multi-Modal Paired Associates Learning Test - III. The MMPALT-III may give practitioners an alternative to self-report instruments now in use..

Most human resource development (HRD) professionals would agree that jobs are changing, even without the benefit of hard data to support the statement. Computers, cellular phones, and fax machines are much more common than a short ten years ago. Similar changes have occurred in industry. Robotic manufacturing, computer aided design, e-mail, and video conferences are commonly found in today's business environment. It would be safe to say the skills that served an employee well in the past may be insufficient as job changes occur.

Research on the work force has shown workers in many areas have limited abilities. Jenkins and Kersch (1994) conducted a literacy profile with 1600 randomly selected subjects in the state of Ohio. The make-up of the subjects mirrored the working population of the Mid-West United States. A full 38% of the workers tested were functioning at the two lowest literacy levels. That is, those individuals had low problem solving skills and were able to complete tasks that involved only a single operation. Additionally, a report by the National Institute for Literacy (1990) stated:

> High wage jobs for people with low skills are on the decline. Increasingly, the only low-skill jobs will also be those that pay low wages. And greater job mobility is likely to mean people with lower skills will be out of work longer (p. 2).

If we accept that a significant number of workers have low literacy skills (and that only low paying jobs or lengthy unemployment await these workers) then we must also accept that for these workers to become part of a more modern work force, they need to be trained to improve their skills.

In order to make workers more viable in the modern work force, it is essential that some type of effective training take place. In the training of adults, learning styles have long been considered critical to the learning process (Wislock, 1993). The difficulty has been in defining learning styles. Cornett (1983) stated there are three broad descriptors of learning style:

Cognitive: how individuals decode, encode, process, and store information.
Affective: emotional and personality aspects of learning style.
Physiological: environmental factors and sensory intake.

Instructors may not be able to control the cognitive or affective aspects of learning, but can be aware of and control the physiological. Steps can be taken to ensure proper lighting, comfortable temperature, positive room decor and seating arrangements to address the environment. Instructors can also target training to the individual trainee's dominant mode of sensory intake to enhance training. Individuals who work in their dominant style(s) experience more success and feel a sense of calm and control (Grun, 1986), (James & Galbraeth, 1985).

This study focuses on the physiological aspect of sensory intake known as modality. More specifically, modality as measured by the Multi-Modal Paired Associates Learning Test versions II and III (MMPALT-II or MMPALT-III). The MMPALT-III is the current version of an objective test that uses paired associates testing methods to determine an individuals relative

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modality strength. Modality is defined as the use of one of the senses to receive information and may be broken into one of seven types:

Print: Reading text only.
Aural: Hearing information.
Interactive: Discussion used in learning.
Visual: Associating pictures and text.
Haptic: Using whole hand touch.
Kinesthetic: Whole body movement.
Olfactory: Sensing odors.

Trainers have attempted to determine employees modalities through the use of self-report instruments and unfortunately these measure an individual's preference not strength. Studies by Cherry (1981), Hardin (1992), and Coolridge-Parker (1989) have shown low correlations between an individual's preference and actual strength. The mode of training selected using a self-report instrument may be among the employee's weakest intake methods.

Research Questions

A number of populations have been tested for modality strengths. The focus of this study is to gather information on the adult basic education population and to compare the modalities exhibited to those of previously tested populations. The research questions to be answered are:

1. What are the modality strengths that appear in adult basic education (ABE) students?
2. How do the modality strengths measured in ABE students compare to other populations?

Methodology

Population and Sample The population selected for this study was the ABE population of Jefferson County Public Schools in Louisville, Kentucky. The sample was taken from the family education centers since the individuals are more consistent in attendance.

Instrumentation and Test Sites The instrument used was the MMPALT-III that consists of seven elements of ten (10) paired stimulus-response items. The MMPALT-III is the latest revision of the original Multi-Modal Paired Associates Learning Test developed by Gilley (1975) and French (1975). The test consisted of six elements: print, aural, visual, interactive, haptic, and kinesthetic. The original version was modified by Cherry (1981) to include an olfactory element and was renamed the MMPALT-II. Cherry and Butler-Tindell updated the test to its current form in 1992. All versions of the test are consistent with Gilley's original recommendations and are consistent with paired associates learning theory (Hardin, 1992). The test is administered to the subjects one element at a time. Both stimulus and response item are given in a predetermined order. The subject is then given the stimulus in a randomized order and is asked to recall the matching response item. The print subtest consists of ten pairs in which a nonsense word is matched with a common word (i.e.,BIW - CAT), the visual subtest consists of ten pairs in which an abstract picture is matched with a common picture, the haptic subtest consists of ten pairs of physical objects, etc. The MMPALT-III determines relative modality strength. Each subtest has a possible range of scores from 0 to 10. Butler-Tindell (1994) determined the scores obtained showed dominant modality capacity (range 8-9-10), moderate modality capacity (5-6-7) and limited modality capacity (0-1-2-3-4). The subjects were tested at their respective instructional locations which were selected at random from ten facilities in Louisville, Kentucky. The test takes approximately one hour to complete.

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Reliability and Validity James and Blank (1991) tested 480 adults ranging in age from 19 to 86 and developed the reliability of the MMPALT instrument. The reliability of the subtests was reported to be: print r = 0.85; aural r = 0.80; interactive r = 0.65; visual r = 0.87; haptic r = 0.74; kinesthetic r = 0.67; and olfactory r = 0.73 (Hardin, 1992). Cherry established concurrent validity by statistically comparing the adult population scores with Gilley's original test data (James & Blank, 1991).

Data Collection Informed consent documents were signed before testing. The individuals who participated were from randomly selected locations and volunteered to be tested. Each group was tested following the guidelines set out by the designers of the MMPALT-III. Demographic data was collected at the test site as well. The data collection on the ABE population took place from December 1996 to January 1997 in Jefferson County, Kentucky at the adult education sites. The tests were scored as to the number of correct responses and transferred to a master sheet which contained only the subject's code number, test score, and demographic data.

Data Analysis The data was transferred from each subject's master sheet to SPSS 6.1 for Windows for analysis. The data collected is ordinal in nature and represents a relative strength of modality used by the subject. Mean scores in each modality area were calculated and these means were used to rank order the sample subjects' modalities relative to previously tested populations (Table 1). One sample t-tests were calculated in each modality comparing the ABE sample to previously tested populations (Table 2).

Results and Conclusions

The conclusions that can be drawn from this study are limited at this time by the nature and size of the sample. Data collection will continue to add to the usefulness of the study, however, the basic information to be gained at this time relative to an employee's learning modality is worthy of consideration.

Table 1: Comparison of Rank Order of Modality Strengths

Rank order	Previously tested populations	ABE sample
1	Visual	Visual
2	Interactive	Haptic
3	Haptic	Interactive
4	Aural	Aural
5	Print	Kinesthetic
6	Kinesthetic	Print
7	Olfactory	Olfactory

The rank ordering of modalities indicates that there may be differences in the way individuals receive information. A more useful statistic is the comparison of means between the two groups as seen in table 2.

Table 2: Comparison of Mean Scores

Modality	Test mean	ABE mean	ABE n	SD	SE mean	t-value	df	2-tail alpha
Print	4.71	2.45	20	1.638	.366	-6.17	19	.000
Aural	5.09	2.90	20	1.373	.307	-7.14	19	.000
Interact	5.20	3.10	20	2.614	.584	-3.59	19	.002
Visual	7.84	5.55	20	2.35	.526	-4.36	19	.000
Haptic	5.15	3.90	20	2.693	.602	-2.08	19	.052
Kinesth	3.17	2.50	20	1.701	.380	-1.76	19	.094
Olfactor	1.20	.0.65	20	1.040	.233	-2.37	19	.029

In general it may be stated that ABE employees appear to have less well developed modalities than the comparison population. Early indications are that there is a significant difference in print, aural, visual, interactive, and olfactory modalities at the .05 level. These differences may be mitigated by the low n tested to date.

According to Butler-Tindell (1994), there are three ranges of modality capacity: dominant (range 8-10), moderate (range 5-7), and limited (range 0-4). The ABE population ranges appear to be the same as other populations with the exception of print and kinesthetic. Other groups range from 0 to 10 in print and kinesthetic while the ABE group range is 0 to 7 in print and 0 to 7 in kinesthetic. The range may expand as greater numbers are added to the study.

Contribution to the HRD Field

Employees need to be trained in the most efficient manner possible that the HRD department can provide. ABE level employees may comprise as much as 38% of the work force. If training is to reach the ABE level employee in the most affective manor, it is essential that the professional understand how to approach the instructional task in a way that will be well received. To that end, the MMPALT - III shows early indications of attaining a level of understanding of how an individual receives information. It is then up to the individual HRD department to structure the learning experience to suit the various needs of employees.

One step that may help the trainer save time and money in the training process is testing employees prior to training to determine the way they receive information best. James and Galbraith (1985) observed:

> If adult learners are encouraged to utilize their dominant perceptual learning modality, the learners will be more successful in their learning endeavors whether it be in the classroom or self-directed inquiry (p.20)

If HRD professionals find a tool that accurately assesses the dominant modality of employees, and address this dominance in training, it may be possible to develop more cost effective and more successful programs. The more productive use of money and materials as well as more responsive employees may result.

Studies by a number of researchers have shown learning style modalities to exist in various adult populations (French, 1975), (Cherry, 1981), (Nix, 1983), (Hardin, 1992), (Butler-Tindell, 1994). If working in one's weakest modality can lead to frustration and failure (James, 1991) and working in one's area of strength can enhance success (Grun, 1986), (James,1985) then it would seem important to enable adults to succeed by targeting training to their dominant modality.

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Measuring Customer Loyalty

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This pilot study identified a number of criteria to define loyal and non-loyal customers. They included revenue generated by a customer, satisfaction of the customer, willingness to refer, and time interval since last purchase.

Customer satisfaction can be defined as the measuring of customers' attitudes toward products or services based on the customers' attitude (Stum, 1995). Not only do organizations simply need customers to be satisfied in today's competitive, changing marketplace, they need 'loyal' customers. Obtaining a 'loyal' customer is even more critical than ever before, as the cost of customer defection continues to outweigh the cost of customer retention (Jones and Sasser, 1994). Disloyalty stunts long-term corporate growth and profits by at least 25 to 50 percent (Reichheld, 1996).

Defining and measuring customer loyalty should be an integral part of an organization's "Voice of the Customer" (VOC) system (Farrell, 1996). Other components of a VOC system could include customer satisfaction studies, win/loss studies, and employee satisfaction studies.

In a recent customer loyalty study conducted for a client organization, three main research questions were identified:

1. What are customer buying patterns and trends?
2. How can loyal customers be identified?
3. What do loyal customers want from their suppliers?

The results of this study could be used by the client organization to improve performance by:

- increasing customer retention,
- decreasing customer defection,
- refining and improving marketing, sales, and service strategies,
- providing information for future organization planning, and
- establishing a strong link between customer loyalty survey results, and key organizational performance measures.

Methodology

This study was undertaken with an organization in the business services arena. It began with a thorough scan of literature using computer databases available on DIALOG. This resulted in the review of numerous articles, periodicals, and books on the subject of customer loyalty. Next, a number of subject matter experts were interviewed, and national and international conferences were attended to gather background research on customer loyalty issues. Then, existing internal customer-related studies were revisited and compared to various aspects of this study.

Next, the questionnaire, which consisted of 24 items, was developed. Fifty percent of the items were open-ended and 50 percent were closed-ended questions. The instrument was then pilot tested with 25 managers from different organizations. Revisions were made as necessary, and the questionnaire was finalized. The population selected from the organization's customer data base was a random sample stratified by geographic regions throughout North America. To obtain a viable sample of this organization's customer base, a questionnaire was mailed to 1300 customers, and another 500 customers were targeted for phone interviews. Out of these 1800 customers, a total of 322 questionnaires were completed from geographically dispersed areas

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throughout North America. This resulted in a response rate of nearly 18 percent. Most of the 322 subjects were managers from organizations with 250 or more employees. In addition, three focus groups, consisting of six to eight people per group, were conducted with customers from throughout North America.

Date files and code books were developed which allowed a closer investigation of the data. All available data were entered into the database. Due to the nature of the instrument, both qualitative and statistical quantitative analyses were performed. Categories were developed for the open-ended questions to group 'like' topics. Some of the major categories included Quality of Service, Quality of Products, Meets Customers' Needs, and Corporate Reputation. When statistically significant, a number of questions were cross tabulated with such items as geographic region, industry, size of company, and type of company. Each question was presented with a subjective narrative and corresponding chart. Figure 1 shows a sample chart.

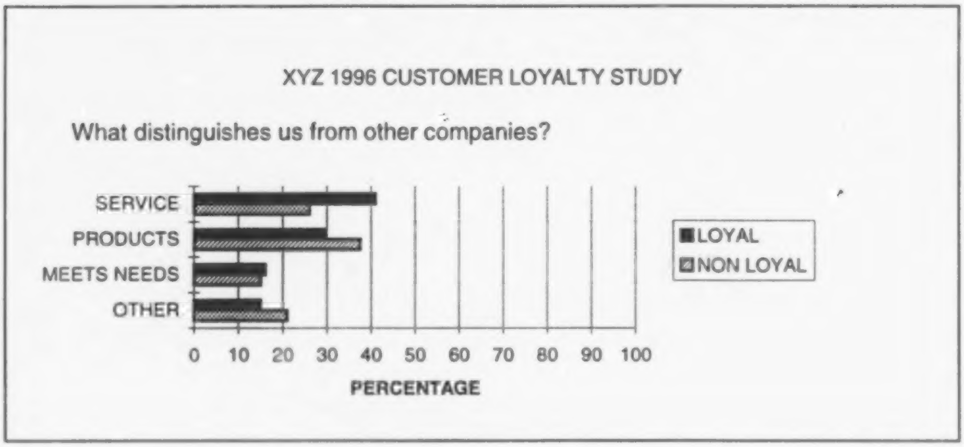

Figure 1. Sample Chart

Findings were identified, and recommendations were provided to key customers within the client organization. Various departments began planning and implementing recommendations that were dependent on the organization's budget and strategy.

Results

Customers were segmented into two groups as loyal and non-loyal customers based on the criteria shown in Figure 2 on the next page:

Loyal Customer Criteria	Non-Loyal Customer Criteria
among the highest revenue generators	among the highest revenue generators
rated their relationship with the organization as a 6 or 7 on a 7-point scale (with 7 being "exceeds my expectations")	rated their relationship with the organization as a 5 or less on a 7-point scale (with 1 being "does not meet my expectations")
did feel confident referring the organization inside or outside of their organization	did *not* feel confident referring the organization inside or outside of their organization
have purchased products and services from the organization for the last 2 years	have *not* purchased products and services from the organization for the last 3 years

Figure 2. Loyal and Non-Loyal Criteria

According to the data, this organization has both loyal and non-loyal customers from which a profile for each emerged.

Loyal customers value the organization's quality of service. These customers feel quality of service differentiates this organization from other organizations in the marketplace. Ninety-one percent of loyal customers feel confident referring the organization due to both the quality of its' products and services. In general, these customers are very satisfied with the organization, but urge them to pay attention to the relevance of their products and services to better meet customers' needs. More than half of loyal customers have purchased competitor products and services, and more than half of those customers feel they *have not* had their needs met by these competitors.

Compared to loyal customers, non-loyal customers tend to value high quality products and services of this organization, and they feel that this is what differentiates them in the marketplace. These customers are 15 percent less likely than loyal customers to refer this organization to others. Those who feel confident referring this organization to others tend to feel better about their relationship than those who did not share that confidence. Overall, they are less satisfied with their relationship with the organization. In addition, they see a need for better service from the field service team. They feel the contact frequency from both field and corporate services is insufficient, and they urge the organization to pay more attention to future quality of service. Seventy percent have purchased like products and services from competitors, and they feel these competitors *have* met their needs.

There was no significant difference in customer buying patterns for loyal and non-loyal customers. In general, customers' decisions to *continue* to do business with the organization were for reasons other than quality of service. In most instances, both loyal and non-loyal customers' initial purchase from the organization was for their flagship product. However, these customers also purchase other products and services, but not to a great extent. This observation could mean that more cross-selling opportunities exist for both loyal and non-loyal customers.

Contribution of This Research to New Knowledge in HRD?

Once customer loyalty is defined and measured, organizations can identify competencies needed by employees to ensure customer loyalty and ultimately help contribute to the bottom-line of the organization. For example, in this study, project management skills would enhance the performance of employees both at field offices and at the corporate office. Improved selling skills were also identified as skills that needed sharpening. Improved organizational processes were also identified as an area for organizational improvement.

This pilot study lays the ground work for future customer loyalty studies. A possible later study could compare future revenues to loyal and non-loyal customers. And, finally, this study could be expanded by applying it to other industries. This would help create a standard instrument.

As competitive pressure, globalization, downsizing, etc. continues to increase, one is sure to find additional press on the topic of customer loyalty on the Internet, in business publications, and in academic books.

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Textual Analysis with Neural Networks as an Alternative Assessment Tool for Evaluating Responses to Open Ended Questions

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Discussion of experiences in using neural network based software to evaluate responses to open ended questions on survey instruments. Included are the strengths and limitations of the software package used, problems encountered, "work arounds" for these problems, and suggestions for incorporating this or a similar package for free form text analysis.

One of the more time consuming and irritating aspects of gathering information is using opened ended or unstructured questions. The recording of the data requires that not only the statements of the respondents be accurately transcribed, but when this information is gathered verbally, the body language of the respondent as well as their facial expressions and tone of voice, ethnic background, gender, and age must also be noted if the "true" meaning of their response or reply is to be determined. Even after this information is accurately recorded and transcribed into written format, considerable additional work by highly skilled, trained and experienced evaluators is necessary if meaningful analysis is to be performed. Additionally, if the more quantitative statistical methods are to be used, a coding scheme must be developed and coders trained to transform the raw textual data into numerical data suitable for analysis using standard techniques such as multiple regression.(Raud) Nevertheless, despite these limitations and draw backs, open ended questions, with either written or verbal responses, are frequently the only way to begin an investigation or evaluation where too little is known to permit the creation of closed question or limited response instruments. Indeed, in many cases, one of the goals of the open ended questions is to gain enough background information to allow construction of a useful closed form instrument.

Our original task, as part of a special project with the Oklahoma Department of Corrections to evaluate the effectiveness of vocational education within the Oklahoma penal system, was to evaluate the written explanations, reasons or suggestions to a series of yes/no questions of the form: (Several response lines were provided on the instrument.)

> Did the completion of the program help you stay out of prison? YES NO circle one
> If "YES" how did it help?____________________________________
> If "NO" why didn't it help?____________________________________

Evaluation was complicated by the existence of many overlapping sub-groups of interest within the target/respondent population. For example, male/female, race, age, type of offense, socio-economic background, and native/alien were sub-groups which required sorting and evaluating the responses by these and other categories to determine if any pattern or differences in textual responses could be detected.

The demographic (quantitative) data for the original 948 subjects, supplied by the Oklahoma Department of Corrections in flat file ASCII format was easily imported into DBF format which our statistical package SPSS [Statistical Programs for Social Sciences] could read and it was quickly analyzed. However, as our initial attempts at textual analysis/evaluation quickly showed, because of the volume of material and the large number of comparisons required, traditional manual methods of evaluating textual (qualitative) data were not practicable.

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Main Research Questions

The main question then became "what kinds of computer software, if any, are available to assist in performing qualitative textual analysis," similar to those available for performing statistical analysis on quantitative data. If anything was available, the secondary questions were: (1) what machines/operating systems will it run on; (2) How much does it cost; (3) How easy is it to use; (4) How much computer expertise is required to install and run; and (5) Is the output useful?

Inquiries within our Department, College and University did not indicate knowledge of anything commercially available within a reasonable price range. The WWW was then searched using YAHOO and the other search engines, and the Internet was searched using Gopher, Veronica and Archie. We discovered that the "textual[1] analysis" covers several topics, including comparing one language to another[2] and it is also a technique used to evaluate anonymous manuscripts to determine the author, and to identify additions and modification to old manuscripts such as the books of the Bible. A considerable amount of information was gathered indicating several commercial packages suitable to our particular needs that were available but all of these were very expensive and required powerful computers such as a digital VAX or Sun workstation to run. What appeared to be the suitable packages for our use appeared to be linked with the "buzz words" artificial intelligence, fuzzy logic and neural networks. At about this time, by coincidence, one of our staff attended the International Society for the Scientific Study of Subjectivity[3] [ISSS] conference at Columbia, Missouri. One of the papers presented (Grosswiler), compared and contrasted the results of using Standard Q methodology and a neural network textual analysis program called CatPac to evaluate the classical Q method data set created by Lipsit. (Brown[4] 184-186) While not directly applicable to our problem, the paper did point us in the right direction.

The company manufacturing this textual analysis program was contacted by phone and our problem discussed. It appeared that this software was at least a good start, and a copy was purchased. Later conversation with our colleagues disclosed that several were indeed aware of work that had been done in the area of pattern matching and analysis, but had not connected this to textual analysis. For Engineers and Computer Science people the main interest was in the machine and process control fields. In the social sciences the operative words were "cluster analysis." This underscores the importance of asking the right questions, and not assuming that just because we seem to speak the same language that we necessarily understand each other. This is particularly true when crossing disciplinary/departmental boundaries.

What is Actually Measured?

It should be clearly understood that neural network analysis is not a statistical technique, although some of the same jargon and terms are used. The complete paired comparison similarities matrix (Woelfel 7) is NOT calculated use sum-of-squares, but rather indicates how frequently two words occur "near" each other in the text. The clusters are generated from the common words in associated pairs. For example, if "prjxz" is found to occur frequently in close combination with "ratib," and "ratib" is found to occur frequently in close combination with "zotts," then "ratib," "prjxz," and "zotts" form a common group. The meaning of "close" and "frequently" are adjustable in the programs. CatPac has five optional methods for the identification of clusters. Each method has particular application depending on what types of information the researcher is interested in. (Woelfel 38-39)

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[1] We also found a significant amount of information under "textural analysis" but this also included the analysis of textures in addition to text.

[2] for additional information see http//www.rut.rice.edu/~barlow/corpus.html

[3] Listserver address Q-METHOD@LISTSERV.KENT.EDU

[4] Email SBROWN@KENTVM.KENT.EDU

What We Discovered

Installation and operation of the CatPac programs was found to be easy and well within the capabilities of anyone with minimal computer skills. It will operate on almost any computer that runs Windows 3.x or Windows 95. (Different programs -- Windows 95 version is better) Huge amounts of RAM and free disk space are not required. However our experience indicates there are other peripheral concerns which should be considered as these have significant effects on how easy to use and how useful the program will be to HRD practitioners and others with large amounts of free form textual data to analyze. Among these concerns are:

The program has no way to select which sections of text within a file to analyze. It simply analyzes all the text in a file. This means that if you wish to compare the responses of Group 1 vs. Group 2, you must create two separate text files. If a large number of categories of interest exist and a large number of comparisons must be made, then it becomes a tedious and error prone process to manually create the necessary files, even if the textual data is not re-input but "cut and pasted" between documents using a word processor. While there may be better solutions, we used an existing database management program called dBaseIV to manage both the quantitative demographic data from the Oklahoma Department of Corrections and the respondents' replies to the survey instrument including their written responses to the open ended questions. With a little programming, text files could be created which contained any desired combination of responses by any desired and identifiable group. For example, the "yes" replies to question 3 by all white males over the age of thirty sentenced to less than 30 months for a non-violent offense.

The program has no way to recognize deviate or alternative spellings, slang/jargon, "non-standard English," nor can it "read between the lines." It is therefore necessary when entering textual data to both correct the spelling and convert into reasonably "standard" English. Additionally, many of the responses were written in "telegraph" format. For example a frequent response was something like "couldn't get no job." Because reflexive usage is important in that it tends to show what the respondent identifies with, and to avoid double negatives, the statement should be reworded "I couldn't get a job." Additionally, indefinite pronouns such as "it" and "that" are very context sensitive, and can mean very different things even in two adjacent sentences by the same respondent to the same question. Therefore, for proper analysis, it appears to be necessary for the person doing the text transcription (input into the computer) to "translate" indefinite pronouns into defined and consistent nouns. Otherwise there is the risk that "it" will be a major concept/word that is actually referring to several different things, or where different synonyms are used for the same thing, important words and relationships/clusters may not be discovered. While this seems like an easy task to do while entering the data, in practice it was found to be quite error prone and time consuming. Additionally, the person doing the "translation" of slang/jargon must understand what is meant by the expressions and idioms used.[5]

The program seems to handle simple declarative sentences best. It is unknown how ironic or sarcastic responses should be identified or handled. Plural usage may also be a problem. Frequently in our material, the singular terms inmate, graduate or prisoner were self reflexive while the plural terms inmates, graduates, or prisoners tended to refer to everyone else. Where this is not the case, the program provides a global "find and replace" option to "consolidate" usage.

While the program outputs are detailed and well organized, their meaning is not particularly clear, at least to us. It is not that there is any particular difficulty in seeing a difference in responses between groups, for example the words "drugs" and "alcohol" showed up much more frequently in responses from the recidivist groups than the non-recidivist groups, the problem is that the significance of these differences is unknown. In many ways this corresponds to having a statistical program that will generate the mean and standard deviation from groups of quantitative data, but not having the knowledge to perform a *t* test to determine if the differences are significant. Indeed, it does not appear to be known if such significance evaluation or testing is even theoretically possible. It may well be that the best that can be done in "natural language" analysis is to provide some type of descriptive statistics where a large amount of textual data is consolidated into a few key words and how these cluster.

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[5] Such "editing" and "transliteration" caused about a 1 grade increase in average reading level in the text material, from roughly 6th to 7th grade.

The Oresme interactive non-hierarchical cluster analysis feature seems to provide considerable insight into how the respondents in a group tend to associate concepts (words). In practice this is two copies of the most common words[6] in the text file. When you select a word in the first list, words that are associated with that word are highlighted in the second list. A numerical value indicating the amount of association is also indicated. You can select more than one word in the first list, for example "drugs" and "alcohol" to see which words in the second list are strongly associated with either of those words. The words in both lists are the ones selected by the CatPac program. These can provide direction and suggestions for analysis. For example, while recidivists and non-recidivists may tend to use the about same words to respond to particular questions as determined by the word frequency analysis, Oresme indicates that the words tend to cluster quite differently. The non-recidivists may tend to associate "I," "job," "opportunity" and "family," while the recidivists may tend to associate "I," "job," "can't," and "problem."

Sample Input Files and Analysis Outputs (Spelling and grammar corrected as indicated above)

Inmate responses to "Did completion of the program help you get a job and if 'yes' how did it help?"

I had experience because of the VOTECH program. The fact that I was a VOTECH graduate. Because I had good comprehensive VOTECH training. Because without the VOTECH program I would not have had the skills and knowledge. I knew a lot more about painting and carpentry work because of the VOTECH program. I had experience because of the VOTECH program. I had the experience required on the job because of the VOTECH program. If I hadn't taken the VOTECH program I wouldn't have known how to do the job. Having a VOTECH certificate and basic knowledge of equipment and tools was main reason for employment. First the VOTECH program provided me with the skill in which I trained for and I was informed of the advantages I could gain for my future. I knew how and what to do on the job because of the VOTECH program. Because of the VOTECH program I knew the tools and everything. I had on the job experience through the VOTECH program. The VOTECH program gave me knowledge of measurements, weights and metal densities. The VOTECH program taught me how to follow instructions. The VOTECH program taught me how to direct my self with respect. The VOTECH program gave me the proper skills for a book keeping job. The VOTECH program gave me typing & computer skills. After completing the VOTECH course in automatic transmission I had a lot more self esteem but I must admit that the course I took in "Breaking Barriers" helped me very much. It was an experimental course that came with the class I took. The first place that I stopped thought it very good that I had received a certificate of excellence from the VOTECH class. I was able to put down more pertinent information than N/A. They were specifically hiring heat and air trained people. I figure from gaining the knowledge in the various areas I did in the

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[6] CatPac has an exclude facility to exclude common words such as the, and, but, etc. and this list can be customized for your particular documents. Also specific words of interest can be "forced" into the analysis even if these are infrequently used.

VOTECH class it helped very much towards getting this job. The VOTECH program provided me with basic experience. By having a higher VOTECH education I showed I was willing to learn new areas. The information and knowledge in the landscaping VOTECH helped me know the seasons, names of plants and products. The VOTECH program helped me by preparing me with skills needed to work as a mechanic. The VOTECH program helped me to be more persistent in getting a job. The VOTECH program was what the job called for. The VOTECH program gave me knowledge about plumbing and electrical, but I need more electrical training. The VOTECH program prepared me with the knowledge I needed to do the job. They liked it because I went to VOTECH. VOTECH prepared me with the knowledge and hands on experience to begin a career in the field of auto mechanics. The VOTECH program built my self esteem and I was prepared for any job they had to offer. The VOTECH program prepared me to be a valuable member of society and gave me self esteem. The VOTECH program gave me hands on experience of working with motors and stuff. The VOTECH program provided me with a working knowledge related to the field. The VOTECH program gave me some on the job training and book knowledge. The VOTECH program gave me more confidence in myself. I went to work for my VOTECH instructor's son. I started out doing general maintenance and ended up cooking and management work.

CatPac Analysis of above text

```
TOTAL WORDS            159     THRESHOLD              0.000
TOTAL UNIQUE WORDS      10     RESTORING FORCE        0.100
TOTAL EPISODES         153     CYCLES                     3
TOTAL LINES             58     FUNCTION          Sigmoid (-1 - +1)
                               CLAMPING                 Yes

    DESCENDING FREQUENCY LIST                   ALPHABETICALLY SORTED LIST
                          CASE CASE                                    CASE CASE
WORD            FREQ PCNT FREQ PCNT     WORD            FREQ PCNT FREQ PCNT
--------------- ---- ---- ---- ----     --------------- ---- ---- ---- ----
VOTECH            38 23.9  148 96.7     EXPERIENCE         7  4.4   41 26.8
I                 32 20.1   98 64.1     HELPED             5  3.1   30 19.6
PROGRAM           27 17.0  127 83.0     I                 32 20.1   98 64.1
ME                21 13.2  101 66.0     JOB               11  6.9   73 47.7
JOB               11  6.9   73 47.7     KNOWLEDGE         10  6.3   67 43.8
KNOWLEDGE         10  6.3   67 43.8     ME                21 13.2  101 66.0
EXPERIENCE         7  4.4   41 26.8     PREPARED           4  2.5   25 16.3
HELPED             5  3.1   30 19.6     PROGRAM           27 17.0  127 83.0
PREPARED           4  2.5   25 16.3     SELF               4  2.5   28 18.3
SELF               4  2.5   28 18.3     VOTECH            38 23.9  148 96.7
```

(Dendogram moved to end of this section for ease in comparison)

Inmate responses to the question "Did completion of the program help you get a job and if 'no' why didn't it help?"

Job wasn't related to horticulture type work. Job was not in the line of skill I was trained for. Job wasn't related to skill I trained for. I really didn't learn nothing. The program prepared me very well to do a good job, but DOC released me with $190 and barely a place to live. Also most employers didn't want an ex-con and it's on my record. I applied for over 20 jobs. The VOTECH program just didn't help. Job that I applied for would not accept me without years of experience and my prior convictions were a problem. I never applied for a plumbing position. I feel that I didn't have the proper contact that I needed so the training was wasted. Job I got was not related to VOTECH courses taken. Because people in general have a complex about hiring convicted felons and it's hard for anyone who has a felony to get a job. Job wasn't same trade I trained for. I learned something I like doing. I have done landscaping & horticulture work at parks, small towns, and Cowboy Hall of Fame. Because my family owns a carpet store and that's where I went to work. I took welding not cooking in VOTECH but that's what I am doing. Education isn't necessary at a saw mill, but I worked at the sawmill to build a job history. I combined that job

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and going to VOTECH to get other jobs. Completing VOTECH didn't help me on my first job but VOTECH did on other jobs. I had this job previous to jail time. I re-opened my old company. The job that I got was at a restaurant. I already had this job setup. VOTECH program was not in the same field as the job. I didn't get a job because I got heart trouble but I think the program would have helped. There are many questions on why didn't someone of many programs available for inmates being released help me. But as you know or should know not one person after so many inquiries would help me. My lifelong trade was unrelated to the VOTECH wood working program, however should a need arise, I have this new avenue open to me now. It's hard for a person who is new at a certain skill to get a full grasp on all that goes with that skill in the amount of time that the Oklahoma DOC gives an inmate to complete their VOTECH program -- it's rush, rush, rush. At that time I didn't have any transportation and no jobs were available that used my VOTECH skills. VOTECH program didn't give enough information on companies who would hire semi-qualified personnel. Job was not related to my program -- I needed further training. The job did not require the use of diesel mechanics. Had to take job although the job was not what I was trained for.

CatPac Analysis of above text

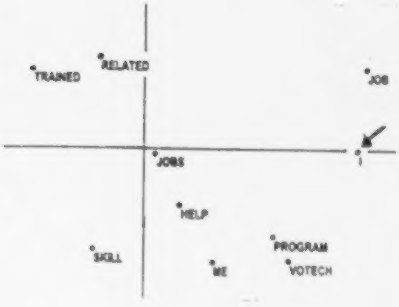
```
TOTAL WORDS             96     THRESHOLD            0.000
TOTAL UNIQUE WORDS      10     RESTORING FORCE      0.100
TOTAL EPISODES          90     CYCLES                   3
TOTAL LINES             47     FUNCTION        Sigmoid (-1 - +1)
                               CLAMPING               Yes

    DESCENDING FREQUENCY LIST                ALPHABETICALLY SORTED LIST
                               CASE CASE                                   CASE CASE
WORD                 FREQ PCNT FREQ PCNT     WORD                FREQ PCNT FREQ PCNT
---------------      ---- ---- ---- ----     ---------------     ---- ---- ---- ----
I                      30 31.2   85 94.4     HELP                   4  4.2   23 25.6
JOB                    20 20.8   71 78.9     I                     30 31.2   85 94.4
VOTECH                 11 11.5   58 64.4     JOB                   20 20.8   71 78.9
PROGRAM                 8  8.3   47 52.2     JOBS                   4  4.2   27 30.0
ME                      7  7.3   36 40.0     ME                     7  7.3   36 40.0
HELP                    4  4.2   23 25.6     PROGRAM                8  8.3   47 52.2
JOBS                    4  4.2   27 30.0     RELATED                4  4.2   22 24.4
RELATED                 4  4.2   22 24.4     SKILL                  4  4.2   17 18.9
SKILL                   4  4.2   17 18.9     TRAINED                4  4.2   19 21.1
TRAINED                 4  4.2   19 21.1     VOTECH                11 11.5   58 64.4
```

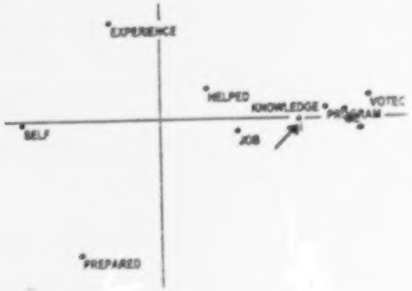
```
    WARDS METHOD Dendograms

    (Did not help)                   (Program did help)
    H M I J P V J S R T              E P S H I M V P K J
    E E . O R O O K E R              X R E E . E O R N O
    L . . B O T B I L A              P E L L . . T O O B
    P . . . G E S L A I              E P F P . . E G W .
    . . . . R C . L T N              R A . E . . C R L .
    . . . . A H . . E E              I R . D . . H A E .
    . . . . M . . . D D              E E . . . . . M D .
    . . . . . . . . . .              N D . . . . . . G .
    . . . . . . . . . .              C . . . . . . . E .
    . . . . . . . . . .              E . . . . . . . . .
    . . . . . . . . . .              . . . . . . . . . .
    . . ^^^ . . . . . .              . . . . . ^^^ . . .
    . . ^^^ ^^^ . . . .              . . . . . ^^^^^ . .
    . . ^^^^^^^ . . . .              . . . . ^^^^^^^ . .
    ^^^ ^^^^^^^ . . . .              . . . . ^^^^^^^^^ .
    ^^^ ^^^^^^^ ^^^ . .              . . . . ^^^^^^^^^^^
    ^^^ ^^^^^^^ ^^^ ^^^              . ^^^ . ^^^^^^^^^^^
    ^^^^^^^^^^^ ^^^ ^^^              . ^^^ ^^^^^^^^^^^^^
    ^^^^^^^^^^^ ^^^^^^^              ^^^^^ ^^^^^^^^^^^^^
```

Two dimensional graphical representations of above word relationships rotated so that "I" is on the positive X axis for ease of comparison.

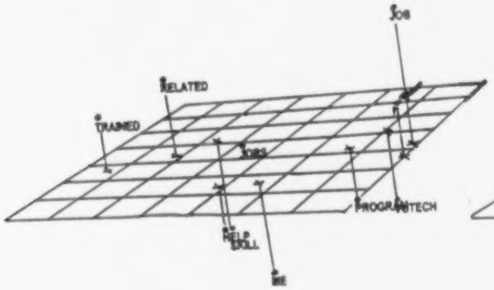


(Did not help)

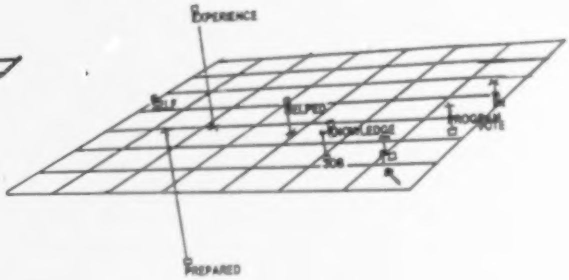


(Program did help)

Three dimensional graphical representations of above word relationships rotated so that "I" is at the right hand side of the graph:



(Did not help)



(Program did help)

Conclusions

CatPac can not replace existing methods of textual analysis in all situations, however it has the potential to greatly assist the researcher by consolidating masses of material into smaller pieces that are more easily understood.

The Oresme interactive non-hierarchical cluster analysis feature is very useful in indicating possible lines of investigation and study. While Oresme will indicate what words are associated within a cluster, it does not explain how or why, therefore the investigator must go back to the original text document and locate the words for "manual" evaluation. The CatPac "find" function is very helpful for this.

If the intent of the researcher is to determine if and to a limited degree how known or posited identifiable groups differ in free text responses to open ended questions than CatPac appears to be a useful tool. However if the intent is to determine if sub-groups with unknown membership criteria exist with different perceptions and attitudes, particularly if the ultimate goal is to identify the salient beliefs of these sub-groups, then other methodologies such as Q will most likely be a better choice.

CatPac does not function as a psychoanalyst, therefore totally free stream-of-conscience material is difficult to analyze and compare. Simple declarative statements in (pertinent) response to specific but open ended questions seem to work the best.

Recommendations

If you or your organization has the need to qualitatively analyze large amounts of textual material and/or perform a large number of comparisons among/between different groups then, subject to the above limitations, CatPac or similar neural network software may well be of considerable help to you.

As with any new software or methodology, it should not be initially used on a critical or time sensitive project. Several hours of experimentation with the program spread over a few weeks are highly suggested. We have found a good way to develop a feel for what this software can and cannot do is to analyze your writing, such as a report or memo that you have just completed while the material is still fresh in your mind. Another approach is to re-analyze textual material and compare the results with the first analysis.

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The Impact of Influential Observations on Multiple Regression Analysis in HRD Research

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An overlooked aspect of multiple regression research using employee provided data is the potential for micro level bias that can unduly influence regression results. This article demonstrates the potential impact of influential observations using a case study. In this case, the identification and deletion of only three observations changed the regression model from non-significant to robust with significant theoretical implications. Procedures for identifying influential observations are outlined.

Multiple regression analysis is a widely used analytical technique in HRD research, particularly in studies attempting to predict outcomes of HRD interventions. Recent examples of studies employing multiple regression include those focusing on transfer of training (Gielen, 1995; Rouiller & Goldstein, 1993; Xiao, 1996), new employee development (Holton & Russell, 1996), factors affecting the opportunity to perform trained task on the job (Ford, Quinones, Sego, & Sorra, 1992), organizational feedback environment and performance (Becker & Klimoski, 1989), age, work attitudes, and performance (Cleveland & Shore, 1992), trainee characteristics and outcomes of open learning (Warr & Bunce, 1995), training fulfillment, organizational commitment, self-efficacy, and motivation (Tannenbaum, Mathieu, Salas, & Cannon-Bowers, 1991), and the influence of pretraining experiences on learning in training (Smith-Jentsch, Jentsch, Payne, & Salas, 1996).

Field studies such as these rely on data collected from employees in organizations. An easily overlooked aspect of using data collected in the field is the tremendous potential for biased responses which can unduly influence regression results. Although large-scale bias (i.e., that in which a large number of responses may, for some reason, be invalid) is a prominent concern for most researchers, bias which affects only a relatively small number of responses is often left unexplored. This article demonstrates that small-scale bias may be a significant issue when using regression analysis in HRD research.

The goal of regression analysis is to estimate the most representative statistical model given certain sample data. This model is presumed to be the one that best reflects the population from which it was drawn and provides the most valid and generalizable results (Darlington, 1990). The presence of one or several influential observations in a sample can undermine achievement of this goal. Influential observations are observations with a disproportionate influence on one or more aspects of the estimates in a regression analysis. This influence may arise as a result of (a) substantial differences in the predictor values from other cases, (b) extreme values for the criterion variable(s), or (c) a combination of these effects (Hair, Anderson, Tatham, & Black, 1995).

The impact of influential observations can be harmless in the sense that they reinforce the pattern of data and therefore do not unduly distort regression results. Alternatively, when influential observations introduce bias into the regression results their effect can be pernicious. In the latter case, deletion of such observations may be desirable in terms of the statistical properties of the parameter estimates as well as the estimate of the final equation (Hocking, 1976). The function of a diagnostic analysis is to identify influential observations and to determine whether those observations should be excluded from the final regression analysis.

This purpose of this paper is to (a) illustrate, using a sample data set, how a small number of observations can significantly influence the results of a regression analysis; and (b) describe a straightforward diagnostic analysis methodology for identifying influential observations in regression analysis, determining the relative influence of these observations on regression estimates, and

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selecting which observations to delete from data analysis.

Method

Sample The subjects for the present study were production operators in two production units of a large petrochemical manufacturer. Production operators in these units were responsible for monitoring, operating, and maintaining production equipment used to produce a variety of chemical products. Operators were required to complete from 30 to over 100 computer-based training modules depending on their job responsibilities in order to meet organizational requirements as well as federal certification mandates for the management and handling of highly hazardous chemicals. Following the completion of training in May, 1995, the data collection instruments used in this study were administered.

Measures The independent variables examined in this study were learning, organizational commitment, performance utility, perceived training content validity, transfer design, and transfer climate variables including positive personal outcomes, negative personal outcomes, peer support, supervisor sanctions, supervisor support, opportunity to use, and change resistance. A battery of instruments were developed or adopted to collect self-reports of these and other factors believed to affect the transfer of training process. For all instruments, common factor analysis with oblique rotation was used to identify latent constructs and scales.

The dependent variable used in this study was supervisor ratings of job performance. The performance measurement process involved identification of a subset of critical tasks on which operator performance was frequently observed by supervisors, and collection of supervisory judgements of percentage of time these tasks were done correctly. In addition to the development of elaborate procedures to collect criterion data, steps were also taken to insure content validity of the performance rating instruments. Due to space limitations a complete description of these procedures is not presented here (see Bates, 1997).

Analysis The relationships between independent and dependent variables were analyzed using bivariate correlation analysis and hierarchical regression analysis. A more complete discussion of the procedures and results can be found in Bates, Holton & Seyler (1997).

Regression Diagnostic Procedures. Procedures for regression diagnostics can be found in most regression texts. We found the procedures in Hair et al. (1995) to be most useful and adopted them as a guide in our analysis. The diagnostic process employed in this study was conducted in these steps:

1. Run initial regression analysis.
2. Test for violation of regression assumptions.
3. Test for multicollinearity.
4. Test for individual influential observations.
5. Test for effect of multiple influential observations.

Run Initial Regression Analysis. Since a diagnostic analysis always addresses a particular regression, the first step in diagnostic analysis is to identify the regression to be run, assuming no irregularities (Darlington, 1990). The diagnostic analysis in this study focused on the full regression model which included twelve predictors (organizational commitment, training content validity, performance utility, learning, transfer design, positive personal outcomes, negative personal outcomes, peer support, supervisor sanctions, supervisor support, opportunity to use, and change resistance), with performance ratings as the criterion and an initial regression sample size of 65.

Test for Violation of Regression Assumptions. In conducting multiple regression analysis, several assumptions are made about the relationships between criterion and predictor variables that can affect the least squares statistical procedure. The four assumptions to be addressed include (a) linearity of the relationship between criterion and predictor variable(s), (b) constant variance of the error terms (homoscedasticity), (c) normality of the error term distribution, and (d) the independence of residuals (Hair et al., 1995). The extent to which the data confirmed these assumptions was evaluated by examining various residual plots. Satisfying these assumptions helps to ensure that the research findings are representative of the sample and that the best results possible have been obtained (Freund & Wilson, 1993).

Multicollinearity A key issue that can have a substantial impact on the results of multiple regression analysis is the degree to which predictor variables are correlated with each other, i.e., the degree of multicollinearity among predictors. Multicollinearity can (a) limit the size of the coefficient of determination (R^2) and make it more difficult to increase unique explanatory prediction from additional variables, and (b) make determination of the unique contribution of each predictor difficult to assess because the effects of the predictors are confounded due to their intercorrelation. In short, a high degree of multicollinearity means larger portions of shared variance and lower levels of unique variance (Hair et al., 1995).

Assessment of multicollinearity in the present study followed the methodology developed by Belsley, Kuh, and Welsch (1980). This process utilized (a) the condition index, an index that represents the collinearity of combinations of predictor variables; and (b) the regression coefficient variance-decomposition matrix which describes the proportion of variance for each regression coefficient attributable to each condition index. All of these measures were available as standard options in SPSS and SAS. The multicollinearity assessment process involved identification of all condition indices above a threshold value (30) and identification of variables within those condition indices that account for a substantial proportion (.90 or greater) of the variance for two or more coefficients. Variables with a condition index greater than 30 and which account for .90 or greater of the variance of two or more coefficients are considered to exhibit multicollinearity. This process is reported to provide greater diagnostic power in the assessment of multicollinearity than the more typical methods examining tolerance values or variance inflation factor (VIF) values (Hair et al., 1995).

Testing for Individual Influential Observations. Diagnostic analysis in regression aims at identifying influential observations and involves efforts to detect three classes of influential observations. These include (a) outliers on the dependent variable; (b) leverage points, or outliers on one or more independent variables; and (c) single observations capable of influencing the regression results in terms of the residuals, individual coefficients, the coefficient matrix, or total model fit (Hair et al., 1995). Common methods used to detect these different classes of influential observations include examination of studentized residuals to identify outliers, centered leverage values or Mahalanobis distance for leverage points, and single case diagnostics such as DFBETA values, studentized deleted residuals, and Cook's distance. Again, these measures are available as standard options in SPSS and SAS.

Test for Influence of Multiple Influential Observations. All of the techniques discussed above are capable of identifying individual influential observations and their estimated impact on regression results. They do not, however, provide information about the potential influence on the regression analysis of two or more influential observations in combination. In order to assess the relative impact on the regression analysis of multiple influential observations in combination, a variable selection technique using all-subsets regression is useful (see Hocking, 1976; Peixoto & LaMotte, 1989). This analysis identifies the maximum-R^2 subset regression model of each size (e.g., subset regression models with one influential observation deleted, two, three and so on to include all individual influential observations). Subsequent to the identification of a maximum-R^2 subset regression model for each subset size, comparative evaluation of the maximum-R^2 subsets follows a technique described by Hocking (1976). This techniques calculates an F-statistic using the difference in residual sum of squares for each model to identify which subset(s) offer significant improvements in model prediction and estimation. This F-statistic is computed using the formula

$$F_{d} = \frac{\text{Residual SOS}_A - \text{Residual SOS}_B}{\sigma^2}$$

where Residual SOS_B is the residual sum of squares of the model with X observations deleted, Residual SOS_A is the residual sum of squares of the model with X - 1 observations deleted, σ^2 is the residual mean square for the full model (no deletions), and df = 1, n -1 - total predictors - total outliers being tested (Peixoto & LaMotte, 1989). This is the only statistic that had to be calculated by hand, but all of the variables in the formula were available on the standard regression printouts.

This approach postulates that the last model in a progressive comparison procedure to produce a significant F-statistic indicates the appropriate combination of influential observations to be deleted from the analysis (Hocking, 1976). Evaluating the impact of multiple influential observations in this manner provides a more discretionary approach to the identification and deletion of unrepresentative observations than that based solely on identification of individual influential observations.

Results

Step 1: Multiple Regression Results With Full Data Set The results of a six step hierarchical regression run with the full data set showed (a) none of the individual steps in the regression produced a significant model ($p \leq .05$); (b) none of the increases in explained variance produced by the addition of variables to the model were significant, including the addition of the transfer climate variables as a set; (c) the full model with all predictors entered was not significant ($F = .97$ ns), and did not explain a significant proportion of the variance in performance ratings ($R^2 = .18$ ns); and (d) only one variable, peer support, emerged with a significant Beta value ($\beta = .41$, $p \leq .05$). These results are summarized in Table 1.

Table 1: Results of the Multiple Regression With the Full Data Set

Step	Variable Entered	R^2 Adj R^2	F_{model} (df)	ΔR^2	F [illegible] (df)	β''
1	Organizational Commitment	.004 -.012	.268 (1,63)	----	----	-.055
2'	Content Validity	.014 -.018	.424 (2,62)	.01	.529 (1,62)	.06
3'	Performance Utility	.027 -.021	.569 (3,61)	.013	.818 (1,61)	-.108
4'	Learning Average	.031 -.033	.486 (4,60)	.004	.248 (1,60)	-.04
5'	Transfer Design	.043 -.038	.533 (5,59)	.012	.741 (1,59)	-.096
6'	Supervisor Sanctions	.183 -.006	.97 (12,52)	.14	1.27 (7,52)	.315
	Pos Pers Outcomes					-.029
	Neg Pers Outcomes					.034
	Change Resistance					.118
	Peer Support					.409*
	Supervisor Support					.009
	Opportunity to Use					.035

' Each successive model in the hierarchical regression analysis includes the variables previously entered.
'' Beta values shown were calculated with all predictors entered in the regression equation.
* $p < .05$

Step 2: Test of Regression Assumptions For the purposes of this paper, these analyses will not be discussed in full due to space limitations. They indicated, however, that no serious violations of the basic assumptions of multiple regression analysis occurred.

Step 3: Multicollinearity Assessment. Analysis of the data indicated no substantial multicollinearity problem among the predictor variables.

Step 4: Test for Individual Influential Observations Identifying individual influential observations involved examination of several diagnostic statistics:

1) Outliers on the dependent variable were identified through examination of studentized residuals. Studentized residuals with values greater than ± 1.96 are significant. As shown in Table 2, five observations were identified (numbers 41, 45, 46, 53, 68) as outliers. Identification of outliers is important because outliers typically do not fit the regression equation well, may have an influential effect on the regression results, and may therefore require some remedy (Hair et al., 1995).

2) Leverage points in the data (i.e., an observation that substantially influences regression results based on its difference on one or more independent variables) were identified using centered leverage values. Centered leverage values greater than *2(# of predictors) ÷ n* for sample sizes greater than 50 may be influential observations (Hair et al., 1995). For the present data set, this threshold value was .369. Four leverage points (34, 49, 54, 68) were identified (see Table 2).

3) Single case diagnostics delete an individual case from the regression estimation and provide a measure of the change in results. Several were examined in this study. Examination of studentized deleted residuals yielded significant values (> ± 1.96) for five observations (41, 45, 46, 53, 68). These are the same observations identified in step 1, the residual analysis. In this instance, however, these observations are outliers from the regression equation which has been estimated *without* their influence (Hair et al., 1995). No exact threshold values are available for DFBETA values. Therefore, examination of a plot of DFBETA values is helpful in identifying observations having substantial impacts on the coefficients. As shown in Table 2, examination of the DFBETA plot showed two observations (46, 68) to have a substantially greater influence on the intercept than other observations. Cook's distance captures both the leverage effects and the change in residuals associated with single observations. That is, it provides a summary measure of the influence of a single observation based on the changes in all other residuals when the case is omitted from the regression estimation. Threshold values greater than one are generally regarded as indicative of substantial influence for a case on the estimated regression coefficients. However, "if no observations exceed this threshold, additional attention is dictated if a small set of observations has substantially higher values that all of the remaining observations" (Hair et al., 1995, p. 157). In this data, no single case had a Cook's value greater than 1. However, three cases (41, 46, 68) had values which substantially exceeded the overall mean (.003). These cases were therefore judged to be deserving of further analysis.

Table 2: Results of Diagnostic Analysis for Individual Observations

Observation	Studentized Residual	Centered Leverage Value	Studentized Deleted Residual	DFBETA	Cook's Distance
34		.41			
41	-2.72		-2.91		.22
45	-2.87		-3.09		
46	-2.44		-2.57	-1.66	.24
49		.43			
53	-2.64		-2.81		
54		.41			
68	2.99	.46	3.26	1.08	.62

Based on the results of the diagnostic analysis, five influential observations (41, 45, 46, 53, & 68) were selected for further analysis. These observations were identified as falling outside the general pattern of data and were identified as influential observations by two or more diagnostic measures. This suggests these observations have the greatest potential influence in terms of improving our ability to estimate a regression equation on a representative sample and to obtain the most externally valid results. Observations 34, 49, or 54 were not selected because, although these cases were identified as having an influential impact on the regression results as indicated by their leverage values, they fall in the general pattern of the data and therefore do not threaten to distort the regression results.

Step 5: Test for Effect of Multiple Influential Observations The final step in the diagnostic analysis involved assessing the relative impact of these five observations individually and in combination on model estimation. This was done using an all subsets regression (see Hocking, 1976; Peixoto & LaMotte, 1989). With five influential observations being examined, a total of 32 possible regression models were identified with various subsets of zero, one, two, three, four, and five variables deleted. From each subset of models with deleted variables, the model with the maximum R^2 was identified. To compare the relative effect of these maximum R^2 subset models on regression estimation, an F-statistic was computed for the difference in residual sum of squares for the five models plus the full model (no deletions).

This approach assumes that the last model in a progressive comparison procedure to produce a significant F-statistic indicates the appropriate combination of influential observations to be deleted from the analysis (Hocking, 1976). As seen in Table 7, the last significant ($p \leq .05$) F-statistic occurs when the model with two observations deleted is compared with the model with three observations deleted. This suggests that the model with three observations deleted (observations 41, 45, & 68) is the most appropriate model for the final regression analysis. Deletion of these observations reduced the final sample size to 62.

Table 3: Comparison of F-statistics for Maximum R^2 Subsets

Models Compared	$F_{1,45}$
Full Model v Delete Case 41	10.32*
Delete Case 41 v Delete Cases 41 & 68	11.72*
Delete Cases 41 & 68 v Delete Cases 41, 45, 68	4.99*
Delete Cases 41, 45, 68 v Delete Cases 41, 45, 53, 68	3.91
Delete Cases 41, 45, 53, 68 v Delete Cases 41, 45, 46, 53, 68	3.67

* $p \leq .05$

Step 6: Multiple Regression Results With Influential Observations Deleted Several significant changes in model estimation are apparent with the deletion of three influential observations (41, 45, 68). First, although none of the steps in the initial regression analysis with the full data set produced a significant increase in explained variance, two steps in the modified analysis are worth noting. The introduction of content validity at the second step in the regression produced a 5.9% increase in explained variance, a finding that approached significance ($F = 3.73$, $p \leq .06$). The data also showed that, when entered as a set, the transfer climate variables increased the total variance explained in the model by .36, a significant gain ($p \leq .001$). Second, in contrast to the initial analysis, with all of the predictors entered, the modified analysis produced a significant regression model ($F_{12,49} = 3.47$, $p \leq .001$) which explained a substantial proportion ($R^2 = .46$) of the variance in performance ratings. Finally, examination of Beta values indicated four significant coefficients as compared to one in the initial analysis. As seen in Table 4, with all variables entered in the regression model, content validity ($\beta = .44$, $p \leq .01$), supervisor sanctions ($\beta = .38$, $p \leq .01$), change resistance ($\beta = .38$, $p \leq .01$), as well as peer support ($\beta = .52$, $p \leq .001$) emerged with significant Beta values.

Discussion

This case study demonstrates the potential dangers associated with organizational research where biased data may occur. In this case, the conclusions reached from the initial analysis would have been dramatically different if the diagnostic procedures had not been implemented. The conclusion from the initial regression model would have been that no transfer of learning occurred, no significant regression model was estimated from the predictors, and there was only one significant predictor. Instead, with the deletion of a relatively small number (3) of influential cases, a robust regression equation emerged in which 46% of the variance in transfer was explained by a subset of predictors. Moreover, these findings (a) highlighted the value of several unexplored dimensions of transfer climate, (b) spawned important implications about the role of transfer climate variables in training effectiveness, and (c) suggested an important modification of the theoretical model used in the study.

Table 4: Results of the Multiple Regression With Influential Observations Deleted

Step	Variable(s) Entered	R^2 Adj R^2	F_{model} (df)	ΔR^2	$F_{[illegible]}$ (df)	β''
1	Organizational Commitment	.004 -.013	.233 (1,60)	—	—	-.181
2'	Content Validity	.063 .032	1.99 (2,59)	.059	3.73 (1,62)	.443*
3'	Performance Utility	.07 .022	1.45 (3,58)	.007	.437 (1,58)	.034
4'	Learning Average	.082 .017	1.27 (4,57)	.012	.75 (1,57)	-.117
5'	Transfer Design	.10 .02	1.25 (5,56)	.018	1.13 (1,56)	-.055
6'	Supervisor Sanctions	.46	3.47**	.36	4.64**	.387*
	Pos Pers Outcomes	.327	(12,49)		(7,49)	.095
	Neg Pers Outcomes					.097
	Change Resistance					.382*
	Peer Support					.521*
	Supervisor Support					-.032
	Opportunity to Use					-.211

' Each successive model in the hierarchical regression analysis includes the variables previously entered.

'' Beta values shown were calculated with all predictors entered in the regression equation.

* $p \leq .01$ ** $p \leq .001$

It is important to note that use of all subsets regression to assess the impact of combinations of influential observations on regression results led to the elimination of three observations rather than five as indicated by analysis of the individual impact of potentially influential observations. The results of the present research suggest that incorporation of this methodology into diagnostic analysis may be valuable insofar as it provides HRD researchers with greater power to be discriminating when making decisions about case deletion in regression analysis.

It would be tempting to conclude the analytical situation portrayed here is an unusual case when, in fact, it is probably quite typical. HRD field research often asks employees to provide data they could perceive as potentially damaging to their own or someone else's career. Typical examples include opinions about a supervisor, opinions about management, perceptions of peers, and supervisory perceptions of subordinate behavior. Although good organizational survey development procedures include steps to prevent large scale mistrust and socially desirable responses, this study demonstrates that this macro level bias is only part of the potential problem. As seen in this study, micro level bias may occur when even a very few employees respond in an odd manner. Furthermore, micro level bias can dramatically alter the results obtained, particularly with small sample sizes as often occur in HRD research.

The very nature of HRD research in organizations suggests that most studies are at risk for some level of suspect responses due to a variety of naturally occurring circumstances. One possible reason is that there is almost always some level of concern, perhaps mistrust, of organizational surveys, especially when the data may be potentially damaging to an individual employee. Despite all best procedures and efforts by researchers to reassure employees of confidentiality, it is likely that some employees may choose to protect themselves. It is probably impossible to prevent a few employees from being reluctant to provide valid answers to the instrument.

Another likely possibility is that interpersonal affect may influence employee responses. In discussing the role of affect in performance appraisal, Cardy and Dobbins (1994) suggest, for example, that differentiated liking (i.e., liking directed toward a particular ratee) may impact perceptions of performance both (a) directly insofar as raters are not able to separate affect from actual performance, and (b) indirectly through its influence on schema formation or attribution formation. Still another possibility is the occurrence of some organizational event which affects only a few employees in such a way that it changes their responses, perhaps only temporarily.

Thus, it seems vitally important that researchers, in attempting to best represent the relationships in sample data, make diagnostic procedures aimed at detecting and assessing the impact of influential observations an integral part of regression analysis. Organizational research is clearly subject to a variety of situations that may bias data. By combining back end diagnostic steps with up front procedures to minimize bias, the best results are likely to emerge.

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An Introduction To A Debate On The Foundations Of The Field: The Purpose And Place Of HRD

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A number of issues indicative of an emerging field have become evident as the education of adults in the workplace becomes a mojor strategic thrust in many organizations.

Adult learning once was considered a social issue having little to do with business operations (Cook, 1977). However, the influence of overseas competition, new technology, and the changing nature of American employees has made the effective training and retraining of American workers more critical than ever before. The scope of this effort is staggering. Employers spend over $50 billion per year on formal employee training and education. Approximately $180 billion per year is spent on informal, on-the-job training. One in eight worker receive formal employer-sponsored job training each year. This represents an estimated 1.6 billion hours of training for 49 million people (Carnevale & Schultz,1990; Training Industry Report, 1995). In-house human resource development (HRD) departments offer more instruction per employee than such alternative sources as external vendors, educational institutions, labor unions, or trade and professional associations. Without question, the workplace seems to be the catalyst that is changing the nature of adult education (The Future of Workplace Learning and Performance, 1994).

The importance of all this activity cannot be overestimated. A literate, educated, inquisitive, problem-solving workforce is essential to the survival and competitiveness of business and industry. A labor force that has "learned how to learn" and continues doing so can give a company a powerful edge. Organizations are discovering and using knowledge of adult learning to upgrade the capacity of their employees to make new contributions to the success of the company.

While the last several decades have witnessed tremendous growth in the field or discipline of HRD, all this attention to workplace learning is not a new phenomenon. Pace, Smith, and Mills (1991) report that as early as about 1100 A.D. crafts training, guilds, and apprentice training were mechanisms for learning in the work environment. With the North American industrial revolution of the 1800s, the emphasis of workplace learning shifted to worker efficiency. The post-modern or information age has brought about yet another thrust--that of employee enhancement. Today, in most companies, employee enhancement focuses on the worth of the individual employee as a valued human being regardless of the kind of work done or the position held in the organization. With workplace learning evolving as a major strategic thrust in many organizations, the field of Adult Education and the newer field of HRD both attend to and claim adult learning in the workplace as major areas of study and practice.

Adult Education and Human Resource Development

Watkins (1989) feels that "adult education in business and industry is the fastest growing area of practice in the field of adult education in the United States. Yet as a field of inquiry, adult education in business and industry is relatively young" (p. 422). However, not everyone discusses adult education and human resource development (training and development) in the same breath. Many writers discuss the training and development of workers in the workplace as a field of inquiry separate from adult education.

Attempts are often made to distinguish between training (HRD) and adult education. Some adult educators feel that trainers are not engaged in education. Most trainers believe that they are. Adult educators tend to make this distinction: training is narrow in scope and involves only learning that is directly related to job performance, while adult education is concerned with the total human being and his or her insights into, and understanding of, his or her entire world. These attempts to distinguish between HRD and adult education belie the fact that both are concerned with the process of human learning.

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Historical context helps explain the divergent development paths of Adult Education and HRD. Research on Adult Education can be traced to Dewey's writing and Thorndike's studies of adults in the 1920s. Concurrently, the broad field of practice began professionalizing with the formation of the American Association for Adult Education, publication of seminal materials such as Linderman's The Meaning of Adult Education (1926), and the establishment of graduate programs to train practitioners in the field. Thus, systematic inquiry dating back to the 1920s has helped establish Adult Education as a bona fide field of study with a solid knowledge base in adult learning. The field of HRD, which also arose out of practice, was not supported by the same type of systematic inquiry until shortly after the Second World War. (Wexley & Latham, 1991).

While the concept that employers would have to offer some type of workplace learning first emerged in the early 1900s in organizations such as Westinghouse, General Electric, and Goodyear (Swanson & Torraco, 1995), the idea that workplace learning could help an organization improve effectiveness didn't come to the forefront in North America until around the time of World War II. During that period, the United States had to mobilize all its resources. Vast numbers of men and women entered the Armed Forces and an even greater number were mobilized into war-time production. However, most of the new workforce had little or no experience in the workplace, especially in manufacturing. It was then that training was seen as a means to easily, efficiently, and effectively give workers the knowledge, skills, and attitudes necessary for production of the vast quality of war-time materials needed. Many of the methods used to train military personnel were adapted for use in the factories.

The post-war era saw a continuation of the training effort. While the veterans possessed the knowledge, skills, and attitudes to win a war, they had little knowledge about peace-time employment. It soon became apparent that the same training methods used during the war would be needed a while longer.

Due to the perceived positive effect that training had on the war- and post-war production effort, interest in training was at an all-time high. Training moved to the forefront. In 1945, a society for those doing training in organizations was formed. It was called the American Society for Training Directors and later changed its title to the American Society for Training and Development (ASTD). For perhaps the first time since the beginning of the industrial age, systematic research was being conducted on training to determine how to make it more effective and to understand its role in business success. These researchers came from many disciplines such as psychology, sociology and business, as well as education and adult education. It is this multidisciplinary approach that has left learning in the workplace wondering where its home really is.

The Purpose of Learning in the Workplace

The job of educating the workforce has come a long way since the 40s and 50s. In fact, the focus has shifted from just training to include training and development, career development, organization development, and to many, organizational learning. The title for the people doing this work has also shifted from simply trainer, to the now more encompassing, human resource development specialist or manager.

During the first half of this century when the workplace was less complex, the mission or purpose of the training effort was clear: teach workers how to do their job in the most efficient manner possible. The more efficient the worker, the greater the organization's profits. Workers were thought of as not being very bright; therefore, jobs were broken down to their smallest and simplest component. Training was directed primarily toward the cognitive and psychomotor domains (Cranton, 1989). Workers were viewed as just "cogs in the machine" and were easily replaced.

Slowly, over the next four decades, things began to change. Signs of the changing times included employers' needs for a more highly educated workforce, even in such traditional companies as steelmills and auto factories. Manufacturing jobs today require that workers have advanced skills in computer technology, robotics, engineering, and communications. The old "tough labor" or hands-on troubleshooting and the need for a strong back are no longer the primary characteristics of American manufacturing jobs. A decade ago, for example, only about 40 percent of production workers held high school diplomas compared with about 71 percent in 1995. Particularly noteworthy in recent studies by the Bureau of Labor Statistics is the finding that although the size of the workforce doing precision or specialized work has remained nearly constant over the last decade, the percentage of those workers with some college education has increased dramatically (National Skill Standards Project for Advanced High Performance Manufacturing, 1995).

These changes in the workplace have caused many in the field of workplace learning to examine the goal and purpose of their efforts (Keith & Patton, 1995). Many believe that the purpose of HRD should be performance improvement; others believe that if the focus is on developing the individual, the organization will also benefit.

Those interested in performance improvement usually use the term human performance technology and focus on strategies to engineer performance in organizations including the work processes and organizational systems effecting individual performance. The emphasis is on technical and skills training (Swanson & Torraco, 1995). In this view of workplace learning, the emphasis is on management engineering and work processes.

The other view of workplace learning holds that an individual is the organization. This individual growth and development approach believes that workplace learning is a long-term investment in the future of the organization (Cohen, 1994). Any learning opportunities contribute to organizational success by producing a more critical-thinking, problem-solving individual that has the ability to think and act independently in a rapidly changing workplace. Learning-how-to-learn or lifelong learning are major themes of this perspective. The concepts of andragogy first brought to current consciousness by Knowles (1980) in the 1970s and self-directed learning (SDL) emerge from this principally humanistic perspective that frames much of adult education. The emphasis is on individual development independent of work processes.

Summary

In summary, the concept of providing learning opportunities for adults in the workplace is not a 20th century invention. Almost since the idea of "work" itself, activities of some fashion have occurred to help ensure that workers had the skills they needed. Over the years, a field of study known as Adult Education began to emerge. Somewhat later, and frantically fueled by the World Wars, a specific, multidisciplinary area concerned with workplace learning also began to emerge. This area was identified as Training and Development, and later evolved to be known as Human Resource Development. The joint, but seemingly separate, development of Adult Education and HRD has left questions even today as to whether the two fields are in fact the same thing.

These and other issues may never be settled for it is this type of scholarly debate that fleshes out a fledgling field and provides it with solid underpinnings. Both sides of these debates make very convincing arguments as can be witnessed in the chapters that follow. As the process of educating adults in the workplace enters the 21st century, new issues and challenges will arise. Certainly the debate will continue.

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The Purpose of Human Resource Development is to Improve Performance

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What is the dependent variable of HRD? We argue for HRD having the purpose of improving performance at the organization, work process, and/or individual contributor levels. This view is founded on the premise that HRD, when practiced within productive organizations, should strive to contribute directly to the organization's performance goals.

The practitioner and research literature has had a running debate about the appropriate goals of human resource development (HRD). Some argue that HRD should focus on increasing the performance requirements of their host organizations and more directly the productivity of the work force. Others argue that HRD should focus on developing the individual in a broad manner without using bottom line results as the litmus test of an intervention's worth. The question can be rephrased as "What is the dependent variable of HRD?" Is it the measurable increase in performance which is the direct result of organizational development and/or personnel training and development or is it something else, like individual learning or participant satisfaction with an intervention?

This paper argues for HRD having the purpose of improving performance. This view is founded on the premise that HRD, when practiced within productive organizations, should strive to contribute directly to the organization's goals. These goals, based on a purposeful system needing to obtain effectiveness and efficiency survival minimums, are performance oriented. Consequently, it is the responsibility of HRD to focus on performance. This chapter proceeds as follows. First, the environment in which organizations operate is examined to gain a better understanding of their goals and responsibilities. Second, the purpose and goals of HRD within that organizational context are discussed. Last, the concept of performance is explored further to clarify understanding and to demonstrate that the performance versus learning issue may not be a source of conflict.

The Organizations in which HRD Operates

An organization is defined to be a productive enterprise having a mission and goals. Additionally, an organization should be thought of as a system, with definable inputs, processes, outputs, parts and purposes (Katz & Kahn, 1966). With this characterization of an organization in mind, HRD can be thought of as a sub-system which functions within the larger organizational system. To gain an understanding of the purpose of any sub-system, it is instructive to look at the goals of the larger system in which it operates.

One of the first lessons to be learned in any business school is that the purpose of a business organization is to maximize shareholder wealth through the effective and efficient procurement and allocation of scarce resources. This goal of business was not arrived at by chance or by fiat. Instead, it is merely a natural result of the economic and political environment in which business functions (at least in the United States). In that environment, individuals have the ability to invest money in a variety of vehicles which produce a return. It is natural that those investors would want to invest most heavily in that which produces the greatest return. The consequence of this is that organizations, in order to attract and retain investors, attempt to provide the greatest returns possible on shareholder investment. Public and non-public organizations operate under parallel principles with their effectiveness and efficiency gains used to reduce costs of services or their expansion. Thus, it is possible to find non-profits, funded through donations or taxes, outsourcing low performing sub-systems to more competitive, for-profit providers. From these effectiveness and efficiency principles, the goals of profit and non-profit organizations follow.

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Of the scarce resources that organizations must procure and allocate, perhaps none is more important to the success of the firm than human resources. Indeed, one large expenditure for many organizations is tied directly to workers, including wages, benefits, and HRD (Becker, G. S., 1993; Noe, et al., 1994). Of course, human resources are unique in that people have feelings, make plans, support families, and develop communities. However, human resources are similar to other resources in that firms
expect a return on the money invested in them (Cascio, 1987). Unless workers are contributing to the profitability and viability of an organization, then it would make economic sense to invest the money spent supporting those workers elsewhere.

The purpose of reviewing these realities of organizational survival is not to paint an unfeeling picture of the workplace in which people are merely cogs in an industrial machine, operating to line the pockets of greedy investors who do not care about the welfare of workers. There are numerous examples of companies who are meeting their financial goals and are also among the most progressive in terms of employee treatment and relations (Levering, & Moskowitz, 1994). Nowhere has it been shown that financial success is in direct conflict with employee happiness and well-being. Instead, these characteristics of organizations were reviewed because they define the organizational system in which HRD operates. By highlighting the purpose and goals of the larger system, insight into the purpose and goals of its sub-systems can be gleaned.

The HRD Sub-System

It is difficult to find an article about HRD without at least some reference to linking HRD to the strategic goals of the organization (e.g., Gill, 1995). It has become almost axiomatic that if HRD is to develop into a respected and useful player in organizations, then it will need to position itself as a strategically important partner. HRD will need to assume the same level of importance as the traditional core organizational processes: finance, production, and marketing (Torraco & Swanson, 1996).

What are the goals of the organizations with which HRD is to become strategically aligned? As mentioned, ultimately they are survival, return-on-investment., and even growth. More important for HRD, however, are the goals one step removed from this. These might include producing high quality goods or services, being the market leader, or having the most highly skilled work force. Each of these second order goals serves a singular purpose: to maximize return. The implications of each of these goals for the sub-systems responsible for carrying them out, however, are more specific and concrete. For example, if it is assumed that the production of high quality goods is an organizational goal, then production needs to focus on systems and processes which produce quality, marketing needs to focus on systems and processes which communicate quality, and finance needs to focus on systems and processes which insure that quality is supported. And of course, HRD needs to focus on systems and processes which insure that the human resources of the organization have the knowledge, expertise and attitudes to produce quality.

Performance is defined as the dependent variable in the form of organizational, work process, and/or individual contributor outputs of productivity. Using this definition, performance is the means by which organizations achieve their goals. Performance can be measured in many ways. Rate of return, cycle time and quality of output are three such possibilities. Additionally, it is important to make the distinction between levels of performance. Performance takes place and can be measured at the organizational, process, and individual levels.

If HRD should be aligned with the goals and strategies of the organization, and performance is the primary means by which the goals and strategies of organizations are realized, then it follows that HRD should be first and foremost concerned with improving performance at the organization, process, and individual levels. If HRD is to be a value-added activity of the firm, instead of a line item of cost which is to be controlled and minimized, then HRD practitioners need to be concerned about performance and how it enables organizations to achieve their goals.

HRD and Performance Improvement

How can HRD improve performance? There are many possibilities at the individual, process, and organizational levels. Figure 1 is a matrix of performance levels and variables which can aid in the diagnosis of performance problems (Swanson, 1994, p. 52). Within each cell are enabling questions which permit diagnosis of performance, but each cell can also serve as a conceptual framework for classifying performance interventions.

As an example, the Mission/Goal variable at the organizational level concerns whether the organization's mission and goals fit with various internal and external realities. If they do not, then most likely performance is being impeded. Assume that an organization's mission and goals do not fit the reality of it's culture, and this is resulting in sub-optimized performance. HRD could attempt to solve this performance problem through structured intervention in a couple of ways, depending on the outcomes of detailed analysis. A process could be put in place to formulate mission and goals which accommodate the organizational culture. On the other hand, a cultural change process could be implemented which seeks to modify culture so that it is better aligned with the mission and goals of the organization. This example and the performance diagnosis matrix show there can be numerous impediments to performance, and consequently numerous challenges and opportunities for HRD to improve performance.

Figure 1. Performance Diagnosis Matrix of Enabling Questions

PERFORMANCE VARIABLES ↓

PERFORMANCE LEVELS ↓

	Organization Level	ProcessLevel	Individual Level
Mission/ Goal	Does the organization mission/goal fit the reality of the economic, political, and cultural forces?	Do the process goals enable the organization to meet organization and individual missions/goals?	Are the professional and personal mission/goals of individuals congruent with the organization's?
System Design	Does the organization system provide structure and policies supporting the desired performance?	Are processes designed in such a way to work as a system?	Does the indvidual face obstacles that impede their job performance?
Capacity	Does the organization have the leadership, capital, and infrastructure to achieve its mission/goals?	Does the process have the capacity to perform (quantity, quality, and timeliness)?	Does the individual have the mental, physical, and emotional capacity to perform?
Motivation	Do the policies, culture, and reward systems support the desired performance?	Does the process provide the information and human factors required to maintain it?	Does the individual want to perform no matter what?
Expertise	Does the organization establish & maintain selection & training policies and resources?	Does the process of developing expertise meet the changing demands of changing processes?	Does the individual have the knowledge, skills, and experience to perform?

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Notice that adult learning plays an important role in most, if not all, of the matrix cells. If HRD is to change culture, then certainly the principles and practices of adult education will play an important role. It is not difficult to see, however, that there are potential needs for educating and training adults within every cell of the performance diagnosis matrix.

So what is the relationship between HRD and adult education. McLagan (1989) defined HRD as "the integrated use of training and development, organization development and career development to improve individual, group and organizational effectiveness." Swanson (1996) offered another definition of HRD along similar lines: "Human Resource Development is a process of developing and/or unleashing human expertise through organization development and personnel training and development for the purpose of improving performance." In both definitions, it is apparent that the outcome or dependent variable of HRD is performance.

Another less obvious implication is that HRD is broader than training or adult learning. There are HRD interventions which involve much more than training, and some (however rare) which might involve no training at all. For example, HRD might be involved in business process analysis and improvement which results in a newly engineered business process with minor modifications that are transparent to the worker, thus requiring no human resource training for implementation. If training were required, it would be a relatively small part of the entire intervention.

These remarks should not be construed as an argument that the field of adult education is a subset of HRD. It is not. The relationship is more like that depicted in figure 2. HRD and adult education, while both interested in adult learning, are discrete entities. Their area of intersection occurs within the host organization. When adult learning decisions about individuals

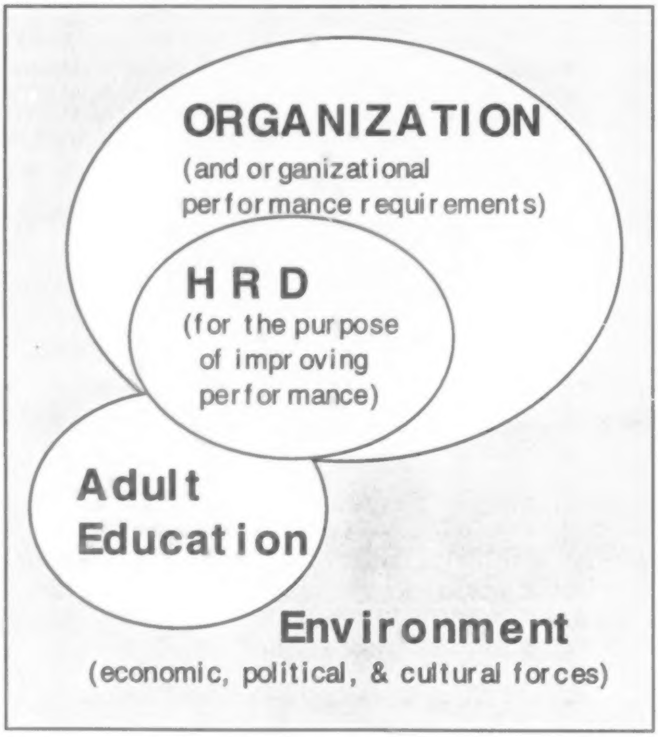
ORGANIZATION
(and organizational performance requirements)
HRD
(for the purpose of improving performance)
Adult Education
Environment
(economic, political, & cultural forces)

Figure 2. Relationship Between Human Resource Development and Adult Education

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are bounded by rules and requirements of the organization, adult learning becomes HRD. When the adult learning rules and requirements are located in the individual, it is AE. The core test is contained in the idea of locus of control. If the organization retains the authority to approve or disapprove learning interventions, the locus of control is with the organization and therefore it is HRD. To the point that they are *overtly* shared, they are both.

HRD includes processes and interventions which do not always involve training. By the same token, adult education does not always take place in the context of organizations for the purpose of performance improvement. The outcome or dependent variable of adult education can be personal growth, general knowledge, personal expertise or even entertainment.

The intersection of HRD and adult education results in performance focused educational interventions having the following attributes. First, the context is organizations. Second, the dependent variable or desired outcome is performance which will directly impact the goals of the organization. Last, the intersection includes education and training interventions.

The Reconciliation of HRD an Adult Education

The tenant that the dependent variable of HRD is or should be performance is by no means universally accepted by practitioners or researchers in the field. Often, concern is expressed that the feelings and worth of human beings as individuals are ignored by focusing too much on bottom line results. Additionally, some hold that fostering learning or the capacity to learn is a valuable outcome in and of itself and assume that sponsoring organizations will logically benefit. Thus the line is sometimes drawn between those who view HRD as tied to business goals and focused on the bottom line and those who would like to take a more humanistic stance in the matter. This dichotomy will be termed the "performance versus learning" debate as a matter of convenience (see Swanson, 1995 and Watkins & Marsick, 1995).

This debate, like many others, is fueled by an often misconstrued delineation of the opposing sides. Upon closer examination it is discovered that perhaps the two sides have more in common than first proposed. On the one hand, those who adhere to the performance orientation of HRD do not do so in an attempt to deny the dignity and worth of employees. Neither do they deny that learning is a necessary component of performance. The goal of performance focused HRD is simply to insure that the HRD process within organizations contributes to the goals of the organizational system within which it operates. This does not necessarily imply an authoritarian management style. Some might argue that to *ignore* performance issues is itself inhumane and inconsiderate of the work force. While organizational performance does not guarantee job security, poor organizational performance puts jobs at serious risk. On the other hand, those on the learning side of the debate are not so naive to think that organizational goals and performance are irrelevant to HRD. Quite to the contrary, they *are* seen as important, but also important are issues which are difficult to tie to the bottom line of an income statement. Trying to foster a drive to learn within an organization may be a noble goal, but this will be difficult to prove if constrained by the tools of cost-benefit analysis. Upon careful consideration, it appears that HRD and AE theory and practice may not be in conflict.

Still, it is our contention that HRD should exist for the purpose of improving performance, indeed, *must* be performance focused considering the relationship of HRD to the organizational system it serves. If HRD is to be viewed as a major business process and not just as an optional activity or a waste of resources, then it must be tied to the goals, most of them financial, of the organization. Does this mean that some HRD programs are *a priori* non-performance based and thus not worthy of development? No, it does not, and this is an important point that requires further elaboration.

Take developing a learning organization, for example (Senge, 1990). Much has been written lately about the learning organization and the benefits that might come from developing such an entity. To simplify matters, a learning organization will be defined as an organization which fosters the ability, desire, and activity of long term learning within the work place. Using the traditional metrics of performance measurement such as cost-benefit analysis, quality, and cycle time, an increasing number of scholars find it difficult to see how an intervention designed to develop a learning organization could concretely be shown to improve performance (Jacobs, 1995). At least it is not as clear cut as a program designed to improve the telephone skills of customer service representatives.

Does this mean that there is no place for the development of a learning organization within performance based HRD? Once again, the answer is no. But the organization must be clear why it is pursuing such a program and what the expected results are. Sadly, organizations and HRD frequently implement ideas and programs without a clear conception of either. This practice is sometimes referred to as "fad driven" HRD. Team building, diversity training, and learning organizations are all concepts which many companies develop programs for without a clear idea of why or to what end. It is this type of practice that performance focused HRD is opposed to. If the purpose of HRD is to improve organizational performance, then it is the obligation of HRD to have analyzed a performance problem in enough detail to determine what the root causes of that problem are and what types of interventions would reasonably be expected to help.

This in no way means that team building, diversity training, and learning organizations do not have a place in performance focused HRD. If an analysis of the organization's goals shows that such programs would be integral in the process of achieving them, then they should be pursued. By the same token, if a performance diagnosis indicates that team building, diversity, or organizational learning might be effective solutions, then they should be pursued. What performance focused HRD does not condone is the blind application of interventions and/or programs based on whims or poorly conceptualized analysis. Unfortunately, many judge this to be the existing state of the profession and an irresponsible state. HRD can be irresponsible in its purpose and processes.

Conclusion

"What is the dependent variable of HRD?" Is it the measurable increase in performance which is the direct result of organization development and/or training, or is it something else, like individual learning or participant satisfaction with an intervention?

We have argued for HRD having the purpose of improving performance. This view is founded on the premise that HRD, when practiced within productive organizations, should strive to contribute directly to the organization's performance goals.

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The Development of the Individual Leads to More Productive Workplaces

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A holistic approach to the development of an individual in the context of a learning organization produces a well-informed, knowledgeable, critical thinking adult who has a sense of fulfillment and inherently makes the decisions that cause an organization to prosper which in turn positively impacts the society.

Workplace learning is in the spotlight as modern organizations seek leverage in organizational performance. Learning is being heralded as the compass for navigating through an environment constantly pressured by unprecedented change, competition, technological advancement, globalization, workforce diversity, reengineering, and downsizing. The recent attention on workplace learning parallels a shift occurring in the sciences. The scientific community is in the early stages of a world view shift from the machine age to the systems age (Ackoff, 1993). The machine or mechanistic world view has been influenced by discoveries in the natural sciences dating back to the seventeenth century (Bohm, 1980; Capra, 1993; Wheatley, 1992). The mechanistic perspective, dominant for over 300 years, views the world as a predictable, reducible, and controllable machine. It deeply influenced the industrial revolution, visible in the design of work from a reductionist perspective where functionalization and simplification of tasks were primary objectives. Mechanistic thinking can also be credited with influencing the remarkable success of the industrial revolution, the creation of both the assembly line and hierarchical, functional management. Yet, today there are newer models that are more appropriate for the challenges of the knowledge and information age. In spite of the availability of contemporary, more apropos models, organizations continue to apply old models to new problems.

The 17th Century logic organizations so faithfully adhere to is being challenged by revolutionary discoveries in the sciences including: quantum theory, field theory, chaos theory, and quantum physics. The new sciences have departed from the mechanistic thinking of the old sciences to a more organic understanding of the word valuing systems, wholes and relationships. "The essence of the new science sees the universe as being an undivided whole" (Nordquist, 1995, p. 2-2). Science has changed. Unfortunately, modern management practice has not.

Capra calls for a "new vision of reality" (1982, p. 16) because the models we have based social systems on are outdated. He suggests that we are caught in a crisis of perception; we are living by ideas that have outlived their usefulness but are blind to see that reality. The new vision of reality respects the world as an interconnected system of relationships that is interdependent. Senge (1993) echoes this sentiment with the observation that, "We are in the midst of a worldwide, fundamental shift in management philosophy and practice" (p. 5). The systems perspective recognizes that seeking organizational control is futile. Instead, systems thinkers aim for prediction based on patterns and behaviors over time, recognize that natural systems are self-organizing and that order evolves from disorderly, chaotic processes, such as learning. Harnessing workplace learning has been suggested as an answer to shifting from the machine age to the systems age mentality. Essentially, making this shift calls for new models of management and workplace development.

New models of organization management and development must shift from mechanistic to systemic approaches. A holistic approach to the development of an individual in the context of a learning organization produces a well-informed, knowledgeable, critical thinking adult who has a sense of fulfillment and inherently makes decisions that cause an organization to prosper which

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in turn positively impacts the society. Further, unless individual development is fostered and supported in organizations, the organizations will fail to prosper over the long term. Of course, organizational environments must also be critiqued for their "conditions of growth" (Dewey, 1916, p. 10). Finally, development must be systemic and holistic if it is to have any lasting impact for either the individual, the organization, or the society.

A new paradigm of individual development is called for in the context of a shifting world view. This essay presents a case for holistic employee development by reviewing the context of learning and development in the workplace today, exploring the present crisis in individual development in organizational life, and presenting a framework for individual development and organizational development.

The Context of Learning and Development in the Workplace

When it comes to workplace management and learning, the machine mentality has been widely applied. Examples include: obsessive growth, rigid management hierarchies, command and control management strategies, production driven decisions, ranking of divisions and employees, rewards for top employees, punishments for low performers, performance heralded as the ultimate goal, internal competition, incentive pay, quotas, short term focus, reactive management, management by objectives, stifling bureaucracy, and assembly lines. Human resource development (HRD) processes have also embraced the machine mentality exemplified by rigid separation of work and life, quick fix management gimmicks, reactive behaviors versus creative long term planning, training unrelated to strategy, training for short-term performance gains, management ownership and control of development, over-reliance on formal training programs, teacher-centered development programs, incremental change, little or no support for personal development or needs assessment, restructuring and "canned" training. Employee development and work have long been treated as mechanical systems. Yet, the work system is a social system and the mechanical model is beginning to falter. Capra observes, "The nature of large corporations is profoundly inhuman. Competition, coercion, and exploitation are essential aspects of their activities, all motivated by the desire for indefinite expansion. . . . Corporations work like machines rather than human institutions once they have grown beyond a certain size" (1982, p. 221).

The HRD trend is toward learning organizations, as popularized by Senge (1990). The challenge of becoming a "learning organization" lies in the ability to truly change organizational structure of development and management from fragmented machine-like bureaucracies, to fluid, connected networks. As with any change, the danger lies with replicating the old ineffective system. The systems perspective poses yet another challenge for HRD: not becoming obsessed with the system at the expense of the individual. Although the system is the focus of such initiatives, obsession with the system may distract organizations from focusing on the fundamental aspect of organizational learning and development: the individual. The pivotal task in shifting to a systems model is putting the individual back in development.

The Crisis in Individual Development

The machine mentality in the workplace coupled with obsessive focus on performance has created a crisis in individual development. Essentially, it has functioned to fragment the person from life. The machine age organization offers most employees, with the exception of managers and professionals, little control over their workplace activities. Jarvis (1992) emphasizes that, "In this organizational and technological world of work individuals learn to become divided selves and to cope with life. . . .Learning how to fit in is a non-reflective learning process"

(Jarvis, 1992, p. 180).

There are few rewards in the workplace of today for admitting, "I don't know," or "I need help," or "I might be wrong." Instead, employees are rewarded for competing against each other, having the right answers and moving quickly in moments of crisis. This reward system leaves employees with little or no time to reflect on the consequences of their decisions or actions. Work is less than fulfilling and employees are meeting personal development needs outside the workplace. Evidence of this detachment can simply be found by reading the newspaper comic strip Dilbert --a comic strip created by Scott Adams that bemoans the dehumanizing, unmotivating, controlling workplace of modern life--to sense that something is amiss in organizational life.

Organizations, in their infatuation with the quick fix, pour money into development when it impacts the bottom line and when times are good. Yet, development that is solely productivity-based misses what it means to be human. There is such an epidemic lack of systems thinking in organizations today that the suggestion of whole-person development will be received by many mechanistic managers as absurd. However, "Earning and living are not two separate departments or operations in life. They are two names for a continuous process looked at from opposite ends. . . . A type of education based on this vision of *continuity* is, obviously, the outstanding need of our times" (Lawrence P. Jacks excerpt from *Journal of Adult Education*, 1929, pp. 7-10 in Knowles, 1990, p. 32).

Productivity-based development may benefit the company, but corporate life has become so immersed in the machine mentality that Capra suggests,

> The concepts of "efficiency," "productivity," and "profit" are used in such a narrow context that they have become quite arbitrary. Corporate efficiency is measured in terms of corporate profits, but with these profits being made increasingly at public cost, we have to ask, "efficient for whom?" When economists talk about efficiency, do they mean efficiency at the individual level, at the level of the corporation, at the social level, or at the level of the ecosystem?" (1982, p. 229).

To divorce the worker from the self is not possible from a systemic perspective, yet workplace development can function to do just that. The essence of developing the whole person is captured by Dewey who insists that:

> Nothing could be more absurd than to try to educate individuals with an eye to only one line of activity. In the first place, each individual has of necessity a variety of callings, in each of which he should be intelligently effective; and in the second place only one occupation loses its meaning and becomes a routine keeping busy at something in the degree in which it is isolated from other interests. No one is just an artist and nothing else, and in so far as one approximates that condition, he is so much the less developed human being; he is a monstrosity. He must at some period in his life, be a member of a family; he must have friends and companions; he must either support himself or be supported by others, and thus he has a business career" (1916, p. 307).

A shift from economic growth to inner growth is desperately needed. David Korten, author of When Corporations Rule the World, in a keynote address at the 1996 Academy of Human Resource Development observed, "The evidence is accumulating that we face a problem that can be resolved only by changing the structures, the rules of the game, of the larger economic and political system within which business operates" (p. 2). People work to serve higher purposes, both tangible and intangible. Thus, systemic workplace development offers a unique opportunity for learning and education that impacts lives, work and communities. In the words of Dewey, "An occupation is a continuous activity having a purpose. Education *through* occupations consequently combines within itself more of the factors conducive to learning than any other method" (p. 308).

Viewing development as valuable only if it contributes to the bottom line productivity is a mechanistic viewpoint that has perpetuated the mechanistic model of the past 300 years. In the systems perspective, it is counter intuitive to only value and focus on performance and productivity as a rationale for learning. New models of individual development are in order that link the whole individual to the organization and society. Although not without risk, the new model holds great promise for individuals and organizations alike.

A Framework for Individual Development

While mechanistic workplaces and development processes are insensitive to adult development across the lifespan, the theory and practice underling adult learning and systems thinking offers alternatives. Holistic individual development for the future is grounded in humanism, systems thinking and adult learning theory. Merriam and Caffarella observe that, "Learning in adulthood is an intensely personal activity" (1991, p. xi). Yet, organizations function to depersonalize, organize, control and often constrain workplace development.

Merriam and Caffarella also estimate that 90 percent of the population is involved with at least one self-directed learning activity a year (1991, p. 54), and Marsick and Watkins (1990) observe that much of the learning in the workplace is either incidental or unintended. What is known about adults as self-directed learners is that they need personal autonomy, they have the willingness and ability to manage their own learning, they need a context that gives them control over their learning, and they meet learning goals without the use of formal institutions or methods (Candy, 1991). In spite of this, much of the development that occurs in the workplace is formal, productivity-based, and fragmented.

The manager who believes that employees are motivated only to serve the corporate interest or who are willing to invest only in development that clearly impacts the bottom line are missing the opportunity to capture the natural energy and enthusiasm that adults bring to their personal learning. They are also likely to be entirely ignoring the reality that their employees *are* engaged in learning that is meaningful to the organization with or without management support. What organizations must recognize is the cost of *not* investing in individual development. Unfulfilled employees are less productive and often leave the organization. The long term cost of replacement is prohibitive to any employer.

What is the bridge that links individual and organizational development? Systemic thinking offers tools and models to build this bridge. Capra believes that, "What we need therefore, is to revise the concept and practice of work in such a way that it becomes meaningful and fulfilling for the individual worker, useful for society, and part of the harmonious order of the ecosystem. To reorganize and practice our work in this way will allow us to recapture its spiritual essence" (Capra, 1982 p. 233).

Employees deserve the space and support to create and articulate personal vision and understand how it connects to the organizational purpose and goals. This demands that the organization create an infrastructure promoting holistic individual development and then connect it on a collective level. This infrastructure supports giving employees the space to reflect and plan safely, and share discourse with other people in the organization about plans and goals.

To suggest that individual development in and of itself is the total answer would violate the very principles of systems thinking. It is the place to start, but once it has been cultivated, it must be integrated into the organization if it is to benefit learning of other employees and the productivity of the organization. Mumford (1996) suggests a pyramid of learning that begins with individual learning at its base followed by one-on-one learning, progressing to group or team learning, and culminating in organizational learning. The hierarchy suggests that organizational learning cannot happen without the preceding levels of learning. The critical understanding lies in the linkage between individual and organizational learning and ways of synthesizing the two. The systems model of development demands an infrastructure that promotes individual growth, commits to cultural change, and strategically links individual and organizational growth.

Promoting Individual Growth Organizations are made up of people. Holistic development integrates personal and professional life in career planning, development and assessment. Holistic development is not necessarily linked to the present or future job tasks, but the overall growth of the individual with the recognition that this growth will have an impact on the organizational system. Dewey asks, "How can there be a society really worth serving unless it is constituted of individuals of significant personal qualities?" (121).

Merriam and Caffarella (1991) conclude that adults engage in learning for the sake of learning, and holistic development essentially involves giving adults the space and support to learn. The ultimate challenge in organizations is to harness adult learners' propensity to be self-directed learners and not create barriers that prevent or discourage it. Senge (1990), refers to the process of individual development as "personal mastery' or "the discipline of personal growth and learning" (p. 141). Personal mastery is the art of defining current reality accurately while concurrently holding an image of a vision that is desired. Senge suggests that the higher the level of personal mastery, the higher the level of commitment, responsibility, and motivation to the organization. Customized, personalized employee development is a dramatic shift from the bottom-line production based focus of the Mechanistic Age. Making the shift not only requires an ardent commitment to individual development, but also a shift in the culture of the organization.

Culture An organization is made up of people who have relationships and share values. The culture of an organization deeply affects the day-to-day functioning of the organization. To shift into the systems perspective, the traditional culture must be challenged, a shared vision for systemic development must be cultivated, and a commitment to long term change must be made.

Workplace development has followed the machine age mentality. Yet, change is in the air. Block reflects, "I think the field of workplace learning and performance is going to return to the person and the individual and to building community and participation. . . .Learning and performing will become one and the same thing" (in Training & Development, 1994, p. 38). Dodgson (1993) argues that, "individuals are the primary learning entity in firms, and it is individuals which create organizational forms that enables learning in ways which facilitate organizational transformation" (pp. 377-378). Senge argues that taking a stand for full employee development is a radical departure from the traditional contract between employee and institution, and in fact, it might be the most radical departure in a learning organization.

Individual development and performance are not either-or-options in organizations today. Performance will improve with individual development actions, but the culture must also support it. Senge notes that, "Ironically, by focusing on performing for someone else's approval, corporations create the very conditions that predestine them to mediocre performance. Over the long run, superior performance depends on superior learning" (1990, p. 7). To achieve renewed focus on individual development and foster a culture change, organizations must design infrastructure to support the learning/systems world view.

Infrastructure An organization is made up of people who are bound by a shared structure and context. Fritz (1989) argues that structure determines behavior and that true change evolves only from creating new structures that are more supportive of the desired outcome. Learning occurs all the time. The task is to harness, capture and ensure effective learning is happening. Watkins and Marsick observe that, "transformation will not come if learning functions as a parallel system, as the training system function does now" (p. 20). Because structure determines behavior (Fritz, 1989) the present mechanistic structures have not supported whole individual development. Osterberg notes that, "In the old way of thinking, companies exist primarily to make profit. In the new way of thinking, companies exist primarily as structures within which people come together to create cooperatively" (1993, p. 69). Osterberg also notes that the hierarchical structure is a serious obstacle to personal development because it is built on fear and mistrust. The current process of goal setting is debilitating as well because it prevents personal development by removing the chance to take divergent routs to achieving organization vision.

Organizations should also develop models of learning that allow them to practice and document their learning processes. A systems perspective to recognize how jobs relate to each other and the overall performance of the firm is also a necessary ideology. Firms must recognize that only through relationships does anything get done and to cultivate strong relationships throughout the organization is a key performance strategy. A company is not a machine but a living organism. Thus, living policies will be much more effective in cultivating an environment supporting holistic development. The task for human resource developers is to help organizations understand the systemic long-term benefit of creating structures to support individual development.

What happens when organizations focus on holistic personal development? The Electrical & Fuel Handling Division of Ford Motor Company is in the process of becoming a learning organization. Throughout EFHD's process a key emphasis has been on individual development. Case study research on the implementation has yielded several themes related to the impact of personal development from the employee perspective (Bierema and Berdish, 1996). Focusing on individual development while becoming a learning organization also has its rewards on an organizational level. When the division's top executive, Bob Womac, is asked to justify EFHD's remarkable turn around he humbly replies, "it is because we committed to becoming a learning organization."

Conclusions

The process of linking learning to performance needs extensive inquiry. Assessing the link between learning and performance is difficult. Nadler and Nadler (1992) Note that "learning brings about the *possibility* of a change in performance" (p. 84), and Crossan, Lane, White and Djurfeldt (1995) conclude that, "there is no evidence to suggest that learning is synonymous with improved performance. . . . Conversely, good performance is not necessarily a sign that learning has occurred" (P. 353). In a landmark organizational learning study in 1965, Cangelosi and Dill concluded that more research was needed, particularly that focused on the interaction of individual and organizational learning and its context. Crossan, Lane, White and Djurfeldt (1995) suggest that this challenge still has not been met. Most every adult works and understanding the learning in this context is of fundamental importance to adult educators. Convincing organizations to support systems wide strategy is difficult.

Adult educators and human resource development professionals are uniquely equipped to research, design and implement new models of workplace development with the individual and learning as top priorities. Clearly, the challenge for adult development in the workplace calls for new models. Bergevin (1967) captures the spirit of whole person learning in the following comments:

> Adult education must, then have a purpose greater than that of learning the skills of the craftsman and the physician and the entrepreneur, important as those are. If we are truly engaged in the maturity process, we do not live to work and make money, or have a

> physician keep us alive merely to be alive. We learn what to do with our lives, how to use our money and our good health to enrich our lives. We use these resources, money and education and health, to help us live. A significant task of adult education is to teach us how to live a full, productive life in which the ability to make a living and stay well is important, but equally important is the knowledge of what to do culturally and spiritually with our lives and talents" (p. 41)

A holistic approach to the development of an individual in the context of a learning organization produces a well-informed, knowledgeable, critical thinking adult who has a sense of fulfillment and inherently makes the decisions that causes an organization to prosper which in turn positively impacts the society. The systems age demands fostering and supporting individual development in the workplace for the long term. Such development holds significant promise for having lasting impact on individual, organization, and societal levels.

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HRD As Evolutionary System: From Pyramid-Building to Space-Walking and Beyond

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Human resource development is modeled as an evolutionary system with an incumbent professional identity. Accepting this model changes the rules for professional practice, field description, and field theory development.

Search in a wide sweep for new and enhancing ways to think about human resource development is likely to be a hallmark of millennial HRD practice and professional preparation. It is not that HRD is frail or depends on this kind of professional soul-searching for its life support, but rather that HRD is growing so fast and in such interesting variety that it draws attention like a magnet. There are volumes still to be learned about the HRD person (the HRD self), about HRD work and its effects, and about HRD as a field. Perhaps this quest for deeper understanding signifies a coming of age, an insistent recognition of HRD as the full-grown, lusty, complex system that it is.

Almost certainly, HRD will not revert to its earlier powerlessness and will not be treated as an organization stepchild as it has been in the past (Baird, Schneier, and Laird, 1983). HRD search and discovery is now being internalized as reflection on personal experience and hope for the future. Externalized, the search gradually crystallizes in the form of a detailed intellectual and performance history of HRD. Fortunately, as often as it looks backward in time or clicks on the present, the search moves forward to what will be. In retrospect, the contributions of many perspectives from multiple root-disciplines are instructive, spelling out the life work of valued theory-builders and practitioners (Underwood, 1991). But as the future looms, urgency is heightened to acknowledge HRD as a confluence, an intermingling of disciplines that produces something ***new***.

HRD as Confluence

The confluence of disciplines in HRD appears to have reached flood stage, spreading over the globe and into space as astronauts from worlds apart fly off to learn from each other. What the future of HRD becomes may have everything to do with what practitioners and academics currently think it is, and further, whether they will acknowledge a sense of belonging to it. Collective action on behalf of HRD as a field, and HRD status as a discipline, depend on such perceptions and commitments.

The HRD milieu is richer now than ever before with the nutrients for human learning. This may be an effect of a primary though often misunderstood principle of General System Theory: that the whole is ***greater than*** the sum of its parts. Most people relate this principle to the idea of synergy, and that is where it drops. What may be a more important aspect of the principle is that a confluence of systems produces something ***other than*** the sum of its parts. Another point often missed is that "greater" means added elements plus changed configurations. It does not imply "better" unless all new elements are systemically integrated, contributing to efficacy of the whole.

A confluence analogy is useful for showing the "other than" nature of whole systems. Even though the Missouri River, the Ohio River, and other tributaries are watershed systems in their own right, downstream they are part of a mighty confluence. The larger whole, the Mississippi River system, began in many places including its own river source, and it is more than the sum of its tributaries. It is also distinctly different from any of them, and different from what it once was. Metaphorically, HRD is like the Mississippi, downstream from its origins and its contributing disciplines. It is a whole new "river."

To attempt a topological map or even a simple listing of root disciplines is hazardous, for HRD theorists and practitioners will dip from whatever disciplinary sources they need at any given time.

Nevertheless, there is considerable agreement that adult education, instructional design and performance technology, psychology, business and economics, sociology, cultural anthropology, organization theory and communication, philosophy, axiology (study of values), and human relations theories, principles, and practices have all become a visible part of the HRD milieu. On the river map, these are very large streams in their own right. Even this should not be considered an exhaustive list of tributary disciplines.

The difficulty for those in HRD who maintain strong identifications with their root disciplines is that, while they can travel overland or chug upstream to their roots, they are forever changed by their trip downstream. The HRD river experience does not wash off. Fortunately a systems thinker can acknowledge belonging to the HRD profession without chopping off sustaining roots. Every HRD practitioner or professor has honorable lineage from somewhere else. Clinging excessively to lineages, however, may do violence to what HRD has become: a new system of thought and practice that has its own identity and professional incumbency.

The upshot is that pulling HRD apart and trying to restore elements of it to various disciplines--for example, by implying that it can be factored into organization development, career development, training and development, or other elements--is like saying that the waters of the Missouri, the Ohio, and other tributaries can be separated and made distinguishable after they enter the Mississippi. Historical reviews of the root disciplines and of HRD system growth are finally beginning to show how much exchange there has been and how little any one discipline can claim to have originated or to hold the high ground of HRD.

Take the case of performance technology. From its birth as an instructional development strategy to deliver better training, it has grown to encompass organizational analysis and consulting dimensions. It may not even lead to training, but to something else that helps human and technical systems work better. Enlarging also, career development has become the task of every employee and every manager-coach. Organization development has become deeply embedded in productivity issues without losing its interest in the learning power of group experiences. Adult education has both feet in HRD practice, although reflexively it seeks knowledge about how people learn. Vocational education still leans to the technical training side, but has recently begun to correct toward more comprehensive pre-work education.

A thorough analysis of the root disciplines above--and many others that have made HRD so richly multi-disciplinary--might find marked differences in underlying assumptions about people and how they work. Symptoms of different paradigms (world views) are certainly present in these strands. The point is, however, that not only practice but also theory-making about practice, seem to be flowing together at a faster rate than ever before.

So it seems that HRD-as-confluence, as a coming together of disciplines, has already happened. What remains is not only for practitioners and academics to acknowledge this but also to recognize HRD as a powerful, boundary-flexing, evolutionary system. It will not only change in the future as it has in the past, but quite likely at an even faster rate. What it must respond to is a startling deficit: a learning rate in organizations running far below the rate of need for learning (Revans, 1982).

As it evolves, HRD may need a new name to represent itself more accurately and to escape from limiting images. Names are powerful, and one denoting systemic organizational learning (SOL) might do more to acknowledge the widening band of constituencies and also emphasize the quantum leaps required to accomplish learning at the rate of change (LRC). But name-change is speculative. Less controversial is the need for widening the HRD angle of vision to acquire a more panoramic view of what people in 21st Century organizations will need. The learning required for pyramid building has never been fully explained and still elicits awe. How much more mysterious, and how daunting, are the learning tasks of the future!

Systematic Plus Systemic Thinking and HRD

Because this model encourages study of ***HRD as an evolutionary system*** with built-in professional identity, a thumbnail sketch of systems thinking may help. Terms from General Systems Theory have crept into every kind of science and social science literature over the past three decades. Some of the original meanings seem to have been lost along the way, leaving misconceptions.

Banathy's systems education classification (1972) specifies four levels of systems analysis and language. Most "systems talk" in HRD appears to be at technician or technologist levels, not at levels of field theory or theory about general systems. Often when a so-called "systems approach" is applied, it turns out to be largely ***systematic,*** as in instructional systems design (ISD) or much of performance technology. These are tool-using, tool-making activities that proceed in relatively linear though often highly creative fashion. The branching sophistication of contemporary multi-media and the Internet tells the power of technician-technologist levels of systems thinking. Even so, this sophistication appears to be more systematic than systemic. Illustrative definitions of systematic are "methodical in procedure or plan, marked by thoroughness and regularity, [and] of, relating to, or concerned with classification, specifically taxonomic" (Webster's 9th Collegiate Dictionary).

Systemic thinking, used to develop field theories and explain systems of relations in HRD, is much rarer. Again by Webster's definitions, systemic means "of, relating to, or common to a system; specifically, affecting the body generally." This comes much closer to what Bertalanffy had in mind when he first described the common properties of systems in organic terms (1968).

Recognizing that field theory in HRD is itself undernourished as the 20th Century draws to a close, there is already the challenge of addressing the general system level of theory development previously bypassed. New HRD literature relevant to this effort could include such matters as explaining and changing organizational thinking and action in terms of systems complexity, chaos, or creativity. Climbing up Banathy's ladder of systems thinking from immediate actions to systemic knowledge about HRD takes its advocates steps beyond trench-work "how-to" toward questioning what and why. As the field of HRD matures, this would seem to be where it ought to head to help people in organizations learn at the rate of change.

Evolutionary Systems Thinking and HRD

Six years ago, Peter Senge thoughtfully reminded everyone that "systems thinking" is a core discipline (1990). But systems thinking is anything but new; it is evolutionary and at least as old as tool making. It draws heavily on intuitive, personally constituted modes of knowing and deliberately merges science and art. Somehow, people learned together how to build all kinds of impressive systems, from pyramids to astronomical calendars. In the Middle Ages, scholars conceived and modeled systems elements and workings of the entire universe. Such complexes of meaning, part fact and part belief, infuse all knowledge.

Scientific respectability for systems thinking arrived with the formation of the Society for General Systems Research in 1954. Bertalanffy's general theory about systems and subsequent elaborations were inspired efforts, for out of them grew unprecedented cross-fertilization of ideas and the beginning of a knowledge revolution that is still in progress. General Systems Theory (GST) provides researchers and practitioners with a metalanguage and metaconceptual framework for studying whole systems, irreducible to component parts.

Flood (1990) has argued that systems science engenders three complementary methodological positions: positivistic, interpretivistic, and critical or ideologically based inquiry. All three points of view are visible in journals like ***Systems Practice, Systems Research,*** and ***Complexity.*** Philosophically, these are all subsumed by evolutionary systems theory, which examines small to large systems like ecology, growth limits, and bifurcations that represent choices between the kind of world systems humans can consciously create and the kind of world that will arrive by default if nothing is done (Laszlo, 1991). At its best, HRD may bridge the gulf between what is (roads now taken) and what might be: the world acting as a system evolving simultaneously toward ***progressive integration and differentiation,*** with working together becoming the norm yet each person accorded individuality and value in diversity. Variety is required for healthy systems.

They evolve and become something wholly new, or they disappear and in so doing, release energy and resources for other, more viable systems. This is not only the essence of evolutionary systems thinking but also of paradigm changing, for old paradigms tend to hide new ways of seeing and creating (Kuhn, 1970; Wheatley, 1992).

Pyramid-Building: HRD Beyond Disciplines, Roles, and Outputs

Reframing ideas about HRD has often taken the form of modeling. Despite the trend toward more complex and systemic definitions of the field, a mind-set remains that HRD is part of, though peripheral to, human resource management (HRM). A model slightly removed from this is McLagan's Human Resource Wheel (1989a) showing HRD outside human resource management, divided in three parts, and doing collaborative work with HRM. While the wrap-around idea of HRD is preferable to versions that show HRD as marginalized by organization maintenance tasks of HRM, the Wheel is still bound up in issues of the status quo (Watkins and Willis, 1991). With slight variations, other authors have followed McLagan's lead. For example, Pace, Smith, and Mills (1991) have suggested analytical, developmental, instrumental, and mediational roles for HRD, but also kept 11 subroles from the McLagan model.. She has herself suggested need for matching systems theory to future HRD issues (1989b).

Some recent HRD books (for example, Swanson (1994; Brinkerhoff and Gill (1994) are thoughtfully framed in systems language. Still, because they are technician-technology oriented, they are more systematic and taxonomic than systemic, as previously defined. They do not lead directly to construction of field theory in HRD or general theories about HRD as an open system. Chalofsky and Lincoln had earlier found five major perspectives on HRD: conceptual/philosophical, operational, functional, field of study, and field of practice (1988). The literature of HRD practice is understandably focused on the operational perspective --that is, on what is currently being done-- but this may be doing practitioners a disservice in the long run. The conceptual/philosophical view seems least represented in current writing, and yet it is the "growth stock" of the future.

Several practitioner/theorists do make this kind of "investment." Watkins, for example, has modeled HRD as a collection of metaphors, rather than a collection of disciplines, and has asked for the hearing of "many voices" in the debates over what HRD is or may yet be (1989, 1991). Watkins and Marsick (1993) offer an extended model for action in the learning organization. It is worth watching for other articles and books that make heavy use of conceptual modeling; they bode well for ongoing development of field theory. If the motif of learning is the heart of HRD and of organizational change, then it needs to be displayed as such in newer models and the contributions of adult education theory need to be made more explicit.

Space-Walking: HRD as a System for the Future

An attempt to conceptualize HRD as itself a system began during the design of a university core curriculum in human resource development (Willis, 1989). Resisting the existing systematic, taxonomic patterns in that turning-point year meant that, while wading in a sea of competencies produced by 11 different studies in the U.S. and Canada, a gestalt switch and paradigm shift was necessary. To describe HRD as an integrated system with interacting elements and a whole new life of its own seemed a good way to move beyond technician-technology levels of system thinking.

The first requirement for redefining a system is to rethink system boundaries. In this case, a circle of HRD is scribed wholly apart from HRM. Such a step is supported by historical precedents, systems science itself, and practitioner experience confirming that HRD and HRM belong to different "paradigmatic continents," borrowing Flood's term for widely differing points of view. Willis and May (1996) contend that HRD is spinning off from HRM just as management information systems (MIS) were earlier spun off from finance departments. In each case, the subsidiary has become too important to be left for last. Internal system relations of HRD are no more contingent upon HRM than they are on any other part of the organization. Organization information functions have not been subordinated to HRM, and there appears to be no compelling reason why organization learning functions should be.

Three representational drawings (Figures 1, 2 and 3) have been made to aid in understanding HRD as a system with dynamic, evolutionary properties and capabilities. Figure 1 sketches HRD in a broadly systemic configuration, with business, education, other types of organizations, and applied sciences acting as paradigmatic continents but also connected through various mediums of exchange. Working at leading edges, HRD-as-system toils on the mine-face of education, digging for organization learning and borrowing liberally from the applied sciences. HRM toils on the mine-face of business,

Figure 1: Four Paradigmatic Continents and Their Encounters

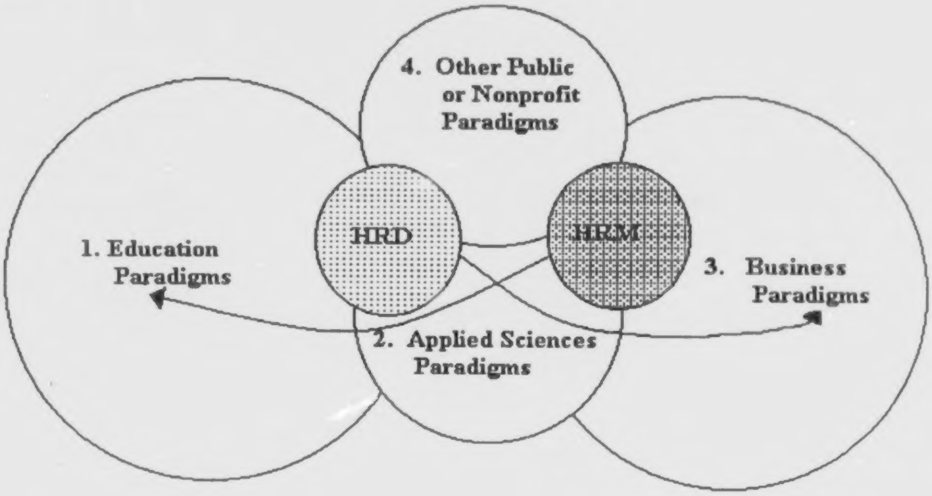
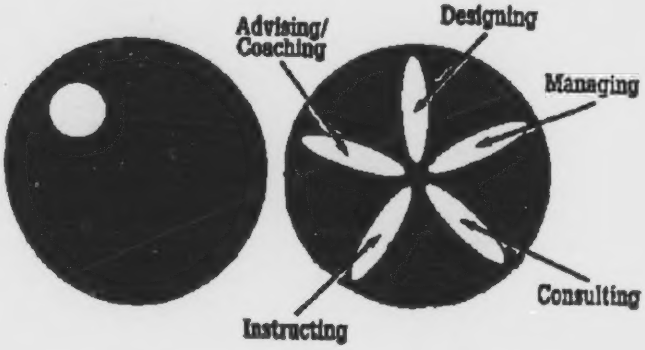

4. Other Public or Nonprofit Paradigms
HRD
HRM
1. Education Paradigms
3. Business Paradigms
2. Applied Sciences Paradigms

Figure 2: HRD as System with Arenas for Action


Advising/ Coaching
Designing
Managing
Consulting
Instructing

HRD
(THE Whole)

HRD
(Cross-Section)

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Figure 3: A “File Cabinet” for HRD
HRD ARENAS FOR ACTION

FOUNDATIONS	INSTRUCTING: DELIVERY	ADVISING/ COACHING	DESIGNING	MANAGING/ LEADING	CONSULTING (PEER)
SYSTEMS & STRUCTURES - General Systems - Psych-social systems - Management systems - HRD Systems - Systems, Allied Fields MODELS & PARADIGMS HRD GENERAL & FIELD - Assumptions - Theories - Definitions - Ideologies HRD TRAITS, SKILLS & CERTIFICATION HRM/HRD DISTINCTIONS NEW TECHNOLOGY - Automation - Software GLOBALIZATION PRODUCTIVITY; QUALITY WORK/SOCIETY	LESSON PLANNING; ORGANIZING “STAND-UP” STRATEGIES’ - Teaching/Learning Styles & Modes - Methods, Techniques & Settings - Learner involvement & internalization BRAIN/MIND STRATEGIES - Accelerated Learning - Imaging, metaphor - Cognitive process COMPUTER DELIVERIES - CBT, CAI, etc. - Videodisc, video - Learning Systems - Tutorials - Automated processes EVALUATION STRATEGIES APPLICATIONS, FOLLOW-UP VARIETIES OF TRAINING - Sales - Customer service - Technical - Supervisory - Management - Etc.	EMPLOYEE DEVELOPMENT - Career Access & Development - Mentoring - Mobility - Asset-Based Manpower Planning and Use - Outplacement WORKPLACE ISSUES - Political, social, economic climate - Interpersonal effectiveness - Ethnic, gender diversity - Equity - Autonomy; power - Literacy - Parental leave - Child care - Health care & fitness - Access to T & D - Access to EAP - Layoff, termination - Violence - Work rules	PERFORMANCE TECHNOLOGY - ISD; Other Models - Front-End Analysis - Template-making for Analysis, Design, Implementation, Evaluation of all Varieties of Training and Development MEDIATED TEACHING/ LEARNING STRATEGIES, TOOLS - Hypermedia - Hypertext - AI - Other computer - Other media SOCIOTECHNICAL SYSTEMS - Productivity & quality systems - Communication & reporting systems - Accountability systems - Employee involvement and participation	GENERAL MODELS & PHILOSOPHIES MANAGEMENT CAREER PATHS HRD CAREERS HRD MANAGEMENT - Reporting Relations - Central/decentralizing - Admin. systems - T & D Systems - Strategic vision - Planning; proposals - Executive presentation; other communication - Marketing - Staffing, supervision - Performance monitoring - Contracting, brokering services HRD FINANCE - Budget - Cost/benefit analysis - Profitability - Corporate accounting - Financial reports - Forecasting HRD IMAGE - Internal - External	ORGANIZATION DEVELOPMENT; CHANGE ORIENTATIONS & PHILOSOPHIES - IT/ID - OD - T & D - CD - MBO - Corporate Culture - Ergonomics, etc. EMPOWERMENT STRATEGIES & STRUCTURES - Participative mgt. - Reticular work groups - Flat & hierarchical - Sociotechnical strategies & accommodations - Other power shifts TRANSFER OF CHANGE AGENTRY SKILLS TO ORGANIZATION RESEARCH & WRITING PROFESSIONAL ASSOCIATIONS

dedicated to efficiency and also borrowing heavily from the applied sciences. Both are at the beck and call of business and education, and of other public, nonprofit, and community enterprises. Migration to other continents is indicated, but the attachment of HRD and HRM to their source continents should be obvious. Neither could adequately do the work required of them without these attachments.

Though not shown specifically in Figure 1, adult education (AE) also forms a spin-off that is too important to be left for last. Once it was thought to be a slight and even capricious variation on mainstream teaching/learning theory and practice. Adult learners themselves -- in great numbers -- have decided otherwise. In a world where the rate of learning falls far behind the rate of change, adult education theory and practice has emerged as a necessity. It offers a rich vein of ore for understanding and practicing HRD. Research that reveals adult learners as meaning-seekers and self-transformers also shows that learning in organizations goes far beyond task behavior change.

When professionals move from adult education academic programs into practice in organizations, they join the "Mississippi" of HRD, even though they do so in a way that fits their own world view most closely. This is not different from what happens to other HRD practitioners who draw strength from other root disciplines. Each stream makes its own contribution and forms its own relations in the HRD system. AE migrates, while still attached to its source continent. Certainly those who have had the river experience of HRD do not return unchanged. Their urgent and practical interest in action learning and creating learning organizations seems a case in point.

The second requirement for understanding HRD as a system is to see that it looks and operates like a system. An initial model (Figure 2) was presented to HRD professors nationally in 1990, proposing that if HRD is conceived as a whole system (symbolized by a three-dimensional sphere) and if it is cut in cross-section across any diameter, five things (elements of action) are occurring at any given time. These are instructing, advising/coaching, designing, managing, and consulting. Each element is distinguished conceptually, although together they are visualized and performed holistically. This overrides the troublesome problems of role and discipline differentiation, for everyone in HRD is always doing all of these things, at some level of expertise, whatever form each action takes. Thus over-specialization or "one-note" career preparation can be placed in perspective with a whole called HRD.

What this model enables is a systemic rather than compartmentalized description of what actually happens in HRD. Leaving any element out, or over-accentuating any, may mean handicapping the performance of other elements. Whatever qualified HRD professionals are not doing -- or not attending to -- there is always a possibility that unqualified others are attempting to do. It follows naturally that HRD practitioners should be insightful generalists, even though root disciplines or career preferences may make them more competent in some elements of the model than in others. It is in and around this general system of responsibilities that HRD curriculum emerges without violating any of the prior taxonomies. This picture has been helpful to those entering the field from earlier disciplines, acting as proof to them that they can transfer root concepts, skills, and values to the HRD profession.

Figure 3 is not what it seems; it only masquerades as a matrix. It is actually an open file cabinet that may be missing any number of fat, relevant files. For example, the whole category called Action Learning has sprung up since last filing. Another set of files is piling up in international HRD.

The aim of this symbolic cabinet is not to be encyclopedic but to illustrate how an HRD practitioner works with information when engaged in any of the five system action sets or when researching foundation literatures. Lines drawn for visual clarity do not represent real boundaries. Cross-overs happen routinely, for any action may involve some or all other actions.

HRD, like Figure 3, is not a finished, closed system; it is evolving and open to further description. It needs to become much more self-aware if it is to have greater impact. HRD needs feet planted firmly on the ground--in order to break out in space and cyberspace. It is an incredible achievement to have come so far and done so much for people in organizations, even after discounting for failures. Chances are that it persists and has shown itself as such a complex system, simply because it accredits the unslakable human thirst for life-long learning.

HRD travels by means of combined scientific, humanistic, and metaphysical motions to known and unknown destinations leagues apart in imagination and miles apart in fact. It has a very long operational history, a very short conceptual history, and an evolutionary system repertoire still to develop in response to a bifurcating, hard-choice age. That organizations are desperate for what mature HRD has to offer is plain; at its best even its detractors know it is more than a string of fads. It is launched toward a future for people who work, learn, and care for each other in a seamless way.

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To Earn or to Learn? The Meaning of Workplace Learning in HRD

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Much of the practice of HRD is grounded in a market model of the workplace. Reliance on this model leads to an emphasis on performance and"value added" approaches, and largely ignores the developmental and educative orientations reflected in recent perspectives in organizational transformation and the field of adult education. Rather than relying solely on a market model, I argue in this article for the "educative workplace" and the democratic ideal, as a conceptual context in which to frame and guide HRD practice within the new and emerging workplaces.

While having dinner recently in a hotel restaurant, I noticed two younger women servers and the middle-aged receptionist vigorously working to keep up with the 25 - 30 customers present. The two servers seemed constantly busy and rushed much of the time, as if they were short-handed. Interactions with customers were courteous but brief and businesslike and they took little time for informal talk or idle chatter. Their behaviors were smooth and efficient but quite task-oriented, focusing largely on the tasks of taking and distributing orders for dinner, and clearing away used dishes. The receptionist often helped them serve orders as they became ready. I wondered how they felt about their work and the workplace, and the opportunities for learning that it provided. Thanking my server and the receptionist, I left the restaurant, thinking similar questions of the bartender, the woman runnng the hotel's gift shop, and the two clerks behind the reception desk. What does the idea of workplace learning mean to them, if it means anything at all? Do they learn from their work or are they merely working to earn a livelihood?

The setting described in this brief vignette provides a concrete context in which to consider the meaning of workplace learning and how it relates to adult education as a field of practice. Should workplace learning, as Gilley and Eggland argue (1989), be framed as an issue of "human resource development" (HRD), in which learning is viewed as a technical, highly job-focused activity and the corporate "bottom-line" is the ultimate consideration? Or, as Michael Welton (1991) has suggested, should workplace learning be framed within the rich tradition of adult education that is committed to individual development as well as social justice and empowerment of people (Collins, 1991)? Should workplace learning be fundamentally job-centered or person-centered? Given the workplace described above and countless others similar to it, it would seem easy to dismiss ideas of individual and social empowerment as abstract ideals with little relevance to the modern workplace. I will argue, however, that this "abstract ideal" provides a moral and political framework for workplace learning more consistent with recent research on work and its organization than the prevailing assumptions aboutworklife derived from the economically-driven view of HRD.

The Strange Space of Workplace Learning in HRD and Adult Education

Work-related education and training occupies a curious intellectual space in the broader landscape of adult learning. According to a recent report, 33% of employed adults within the United States receive some form of job-related training (U.S.D.E., 1994), and work-related goals are the most common reason given for adults participating in some form of education (Courtney, 1992; Merriam & Caffarella, 1991). Yet, as educators of adults, we don't know quite what to make of this form of learning. The practice of Human Resource Development (HRD) is a case in point. Adult educators

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themselves disagree as to whether HRD should be considered a part of their field. Seeing themselves as upholding the vision of the field of adult education articulated many years ago by Eduard Lindeman (1926/1961), some decry the encroachment of "vocationalism" on a field traditionally committed to social justice and the empowerment of people (Hart, 1992; Collins, 1991; Cunningham, 1993). Others tend to view HRD as a legitimate area of practice within the broader field of adult education (Brookfield, 1986; Watkins, 1989). Although HRD specialists generally regard their field as ultimately committed to the corporate "bottom line," they, too, disagree as to whether their practice is best understood as a form of adult education. Some see it as virtually interchangeable with adult education (Nadler, 1984), while others argue that it represents a field of practice distinct in many ways from adult education (Gilley & Eggland, 1989; also Willis, this volume).

The economic aims and purposes of HRD have been used by HRD specialists as well as critical adult educators to distinguish the field from the practice of adult education. HRD continues to be influenced by an ideology of scientific management and reflects a view of education where the power and control over what is learned, how, and why is located within the organizational leadership, corporate structure, and HRD staff, a view of education clearly illustrated in the opening vignette. In many respects, this inservice program is typical of many kinds of workplace education and training programs. Humanistically-minded reform efforts have done little to fundamentally alter the ways work and the workplace is conceptualized. Recent writings, however, in work and organizational life emphasize the developmental function of work and the participatory and democratizing trends within the workplace, both of which are challenging the fundamentally economic and job-centered framework within which much of the practice of HRD is cast. The democratic and social justice traditions of adult education provide HRD with a conceptual framework for guiding its practice within these "new" workplaces.

"It's the Economy, Stupid": The Market Model and HRD

The traditional hallmark of an HRD program is its relationship to the sponsoring organization, a relationship usually defined in economic terms as contributing to the "bottom line." This orientation is not surprising, given the pervasiveness of the market model in the way we think about society and our lives. In a jacket-cover endorsement of a popular book on supply side economics (Wanniski, 1989), former President Ronald Reagan wrote, "Economic truth is a lever that can move governments, move history...the economic model that we've created truly has become... 'The Way the World Works.'" When responding to a question about his salary, former Chrysler executive Lee Iacocca, remarked, "that's the American way. If little kids don't aspire to make money like I did, what the hell good is this country?" (DeYoung, 1989, quoted in Kincheloe, 1995, p. 121). Workers in the 1992 Democratic Presidential race were reminded of the key issue in the campaign with a centrally located motto, "It's the economy, stupid."

While one goal of adult education is to strengthen the forces of democracy within society, HRD is often conceptualized and justified within a market economy model, reflected in the various assumptions embedded in its practice. The market model is grounded in a view of humans as *homo econimocus*, "a human who is primarily an instrument for economic aims" (Kincheloe, 1995, p. 5). Individuals work to live - to consume - and the meaning of work rests with its capacity to provide workers with this consumptive power. The job is viewed as being comprised of distinct, specifiable skills and competencies which are empirically demonstrable, and separate from the individual who performs them. Effective performance is determined by measuring the "value added" to corporate "bottom line." The conditions of the workplace and the kind of work individuals are asked to do are considered only if they influence the efficiency with which an individual worker acquires the knowledge and skills necessary to perform the job.

Evolving from the scientific management movement (Taylor, 1911), practitioners of workplace learning programs have adopted a language of technical-rationality for framing their work and "scientific" strategies for planning learning experiences and assessing their effectiveness. Learning within this context is intended to contribute, through improved performance, to this "bottom line" and, ultimately, to our society's global competitiveness. In the traditional view of HRD, practitioners focus on designing and implementing programs that transmit to passive workers the knowledge and skills "needed" to improve the company's overall performance and, ultimately, society's economic competitiveness. In this market-driven view of education, "learning" itself is defined in particular kinds of ways, largely by the perceived needs of the sponsoring corporation and the work individuals are required to perform.

As a result of this job-centered, bottom-line orientation, value is placed on certain forms of learning, while other kinds of learning are marginalized. For example, a welder participating in a 20 hour workplace literacy program, targeted to improve his job-related reading skills, remarked during a break in instruction that he really wasn't learning anything from the program and that "if they taught me how to read, now that would be something." He wanted to be able to read stories to his grandchildren and this program was not helping him accomplish that goal. With such an emphasis on predefined, formal learning, nonformal and incidental learning goes largely unnoticed. When asked what they have learned from their work, workers often refer to such lessons as the power structures within the workplace; what a person *really* needs to do to get ahead - who to please and who can be ignored; and the minimum amount of work they need to do not to get fired. While HRD practitioners work hard to effectively package knowledge in predefined behaviors and skills, workers are busy constructing their own meaning of work. They learn to see their workplaces as authoritarian, mind-numbing, fragmented, repetitious, monotonous, dreary, and often unsafe (Kincheloe, 1995; Terkel, 1974).

Workplace learning programs and other workplace initiatives grounded in the scientific, technical-rationality of the market economy model have done little to either address these lingering problems or to improve the overall performance of companies. As in the case of the welder discussed earlier, some of these programs actually seem to contribute to the overall sense of alienation and powerlessness workers feel in their jobs. Furthermore, the idea that education for economic competitiveness enhances social stability remains largely speculative. Emphasis on the need to compete in a "global economy" has resulted in severe damage and destruction to local communities, so-called "third-world" nations, and ecosystems. "Reformist" approaches which aim to build up the worker through various motivational strategies, while leaving the basic assumptions of work and its structure intact, have done little to address the disturbing negative fallout of the market model on the individual, society, or the environment.

HRD specialists and critical adult educators point to this market-based approach as a major reason why HRD should be considered apart from adult education. This position, however, is untenable not only for the ethical issues involved, but because it does not adequately conceptualize the emerging view of work described in the literature and increasingly acted upon by companies. This perspective is consistent with the individual and social justice tradition of adult education, a tradition based on the idea that economic well-being *follows from* rather than *produces* a strong and vibrant democracy (Kincheloe, 1995).

Work as Developmental and Empowering

Like many other aspects of our socio-cultural climate within society, we are witnessing contradictory impulses around the issues of paid work. More progressive, person-centered, participatory, and self-authorizing views of work are evolving along side disturbing trends of employment instability and downsizing, increased work hours, deterioration of social relations of work, and a cheapening and devaluing of human labor. These contradictory trends underscore the political and contested nature of work today. The progressive perspectives, however, provide an opportunity to explore more fully how the workplace can be understood as a site for adult learning and development.

In sharp contrast to the objective, technical-rational conceptions of work based on the market model, many scholars, representing the fields of organizational studies, human relations, job redesign, and education now stress the inherent subjectivity of work, its existential meaning, and its relationship to others and to the natural world. Within this paradigm, the realities of work are seen as often much more messy and ambiguous than implied by the traditional, technical-rational perspective and Tayloristic views of the workplace are sharply criticized (Aktouf, 1992; Kincheloe, 1995). A central feature of this alternative perspective is the "person-centered" view of the workplace and the importance of the meaning of work to the individual worker in improving organizational life. Work is viewed as vocation or calling and vital to individual development, reflecting a belief that we *live to work* (Sinetar, 1987), that the meaning we attribute to our work contributes a substantial portion of what we come to view as our life's meaning. This perspective focuses on the worker's experience within the job and stresses the importance of individual as well as organizational learning. The burgeoning "spirituality of work" literature (Bolman & Deal, 1995; Chappell, 1993; Dirkx & Deems, 1996; Hawley, 1993; Fox, 1994; McKnight, 1984; Whyte, 1994) also illuminates this deep-seated concern for the meaning of work. Working from theories of alienation, radical humanists, such as Omar Aktouf (1992) stress that workers need to experience their work as *vital work*, "a real, rather than a formal, appropriation....[an] extension of themselves, as an occasion for self-expression as well as for the pursuit and satisfaction of personal desires and interests that converge with those of the firm. (p. 419). This concern for the meaning of work to the individual is reflected in several different theoretical approaches to understanding the workplace.

This emerging paradigm also draws our attention to the ways in which work is organized or structured, and its social and political context. Studies of the workplace clearly reveal that how work is structured is a major factor in whether work is experienced as "either brutal and boring, enjoyable and exciting" (Csikszentmihalyi, 1990, p. 154). Restructuring is evident in the move from Fordist, assembly-line approaches to teams working together, such as Volvo and Saturn's team approach to car manufacturing, as well attention to the *kinds* of work individuals are asked to perform (Fox (1994). An aspect of this restructuring of work is a growing recognition of the importance of the social context of work (Kincheloe, 1995). Aktouf (1992) asserts thatpeople...are fundamentally defined by community, society, and their relations with others. The relations in and through which people live, help them to construct and grasp their sense of self (which make them the ground and condition of self-realization)....all recognized "man's" nature is undeniably social and community-oriented. (p. 413) Team or group approaches to work and learning stress collaboration and cooperation among workers, rather than individual responsibility for particular tasks.

Increased emphasis is also being placed on a more progressive, democratic and just workplace, "a workplace that has respect for the worker and established dignity for citizenship (Lugg & Dentith, 1996, p. 40). Aktouf (1992) suggests that the desired "firm can result only through the combined efforts of individuals who are driven by the desire to cooperate, and this cooperation will be expressed through freedom of speech, greater autonomy, equity, and conviviality of all members" (p. 418). Welton (1991) argues thatIndustry is the ***most important*** area [for fostering a democratic society] because most individuals spend a great deal of their lifetime at work and business of the workplace provides an education in the management of collective affairs difficult to parallel elsewhere. Therefore, if individuals are to exercise the maximum amount of control over their own olives and environment, the authority structures in these areas must be organised so that individuals can participate in decision making. (p. 31).

Within the workplace, this emphasis is manifest as participative and self-management, self-leadership, and shared power. Worker participation in problem-solving and decision-making is a hallmark of this emerging paradigm, usually expressed through self-managed work teams and groups. Similar to self-management, self-leadership reinforces the importance of allowing workers control over their lives (Waterman, 1994). The management literature is filled with examples of the positive effects of workers assuming more control over their worklives and the negative consequences of denying or taking away that control. Sharing power reflects a fundamental belief that a moral workplace is achieved by stressing autonomy and freedom through servic(Chappell, 1993).

Thus, changes instituted by a number of corporations and reinforced by research and theory provide strong evidence that the workplace can and should be different. A key feature of this emerging paradigm is the idea of the workplace as a site for individual and group learning.

Fostering the "Educative Workplace" Through HRD

The emerging paradigm reveals a view of work that is developmental, participatory, and self-authorizing, if not democratic. Considerable emphasis is placed on contextual or situational learning, in which worker-learners are collaboratively engaged in both problem-posing and problem-solving within their experience of work. As Welton (1991), points out, these qualities are educative and contribute to a sense of the workplace as a primary site for adult learning and the practice of adult education.

Although "new" to the workplace, these characteristics reflect a long-standing moral and political tradition within adult education. In the first part of this century, Eduard Lindeman (1926/1961) argued that an individual's life is largely shaped by the institutions, politics, and economic forces of the times. For him, the meaning of adult education rested with its capacity to work for and help fully realize a democratic vision within society. Such a form of education was characterized by four assumptions which have come to be well known among adult educators today: (a) education *is* life, rather than a preparation for it; (b) the purpose of education is to put meaning into life and to provide opportunities for expressing the "total personality" of the person, rather than merely training individuals to perform specific functions; (c) the emphasis in adult education needs to be on the specific contexts in which adults find themselves, focusing on learners' needs and interests within these situations rather than subject matter; and (d) the most important resource within the learning setting is the individual's experience, which is, as Lindeman stated, "the adult learner's living textbook" (p. 7).

Lindeman's ideas formed a core set of assumptions about how adults learn, which many educators of adults today know as andragogy. Popularized by Knowles (1980), andragogy also became part of the lexicon of workplace learning. This reinterpretation of Lindeman's ideas, however, cast adult learning within an individualistic framework. Many workplace educators adapted these principles to social and political contexts structured largely to honor the corporate bottom line rather than fostering the broader, deomcratic vision inherent in Lindeman's ideas. As a result, much of HRD and workplace education assumes a traditional "schooling" quality, with emphasis being placed on *what is to be learned.* Process issues are considered as technical strategies to achieve pre-defined goals and objectives, in which workers have relatively little voice. While the so-called "quality improvement effort" was hailed as a new approach to involving workers in more democratic decision-making processes, many workers perceived interventions such as quality circles as little more than impotent structures designed to garner worker support and rubber stamp decisions already made by organizational executives. "Self-managed teams" are a recent reincarnation of a this approach to "democratizing" the workplace and they are floundering in many organizations for similar reasons. Reducing process issues to a kind of technical intervention ignores the profoundly different view of social and political relations that are inherent these more worker-centered ideas. Rather than being viewed as ends in themselves, they become means to ends that are largely economic and have little to do with fostering individual individual or strengthening democracy. In other words, HRD has been implicitly conceptualized by many practitioners as contributing to the smooth functioning of the corporate machine, a kind of educational lubricant to increase the efficiency and effectiveness of existing goals and structures.Andragogy has simply become pedagogy with an adult twist.

But the vision that Lindeman and others held for the field of adult education has not been abandoned in the workplace. Many researchers and practitioners recognize the andragogical qualities inherent in "good work" and continue to work for full implementation of these principles. In various ways, adult educators such as Brookfield (1986), Marsick (1987), Watkins (1991), and Mezirow (1991) redefined the meaning of andragogy by emphasizing the importance of fostering critical thinking, critical reflection, and other "learning-to-learn" strategies within adult learning. The work of Watkins and Marsick, both of whom see themselves as adult educators, has had an especially profound influence on revitalizing these ideas of adult learning within the workplace. Critical educators, however, argue that even these attempts to "reform" the concept of andragogy fail to take workplace education and training beyond their individual-centered approaches (Collins, 1991; Cunningham, 1993; Hart, 1992; Welton, 1991, 1995). Even critical educators, however, do not devalue the importance of the individual's experience of work. For example, Kincheloe (1995) argues that a critical postmodern pedagogy of work involves "an image of a just future grounded on a description of good work" (p. 66). Good work, according to Kincheloe involves a sense of completion and fulfillment, an engagement with the individual's meanings and purposes. Welton (1991) argues, "The empirical evidence from work and personality studies certainly suggests that good work is a normative need for human beings" (p. 41). By "good work" Welton suggests a content of work that provides "opportunities for development of worker wellbeing" (p. 32). In exploring subsistence work, Hart (1992, p. 177) argues for a view of work which "acknowledges rather than denies the natural foundation of human existence," an understanding of work as oriented "towards use and life."

Critical educators, however, find revisionist versions of andragogy to be inadequate for overcoming the alienating structures within the workplace and they draw workplace educators back to the social justice and democratic themes to which Lindeman gave voice in *The Meaning of Adult Education*. They stress the importance of attending to the ways in which work is structured, and the social and power relations which condition our experience of the meaning of work. According to Kincheloe, "the core of the crisis of America's workforce is a crisis of democracy" (p. 5). Welton (1991, p. 31) argues that "industry is the *most important* area [for fostering a democratic society]" because we spend so much of our lives at work. Within the business of the workplace, we experience an "education in the management of collective affairs" that is hard to match in others spheres of our lives. For these experiences to be truly educative, however, work needs to be organized so that individuals can engage and participate in decision-making. Welton and other educators concerned with the relationship of education and work stress the importance of participatory qualities and skills in the workplace which can only be developed through democratization of its social and political structures.

The process issues so prominent in the emerging views of work are also prominent facets of adult education practice as well. Rather than predefining the goals of workplace learning through some kind of "scientific," technical strategy, an HRD practice guided by the vision of adult education for democracy would emphasize what Welton (1991) refers to as the "educative workplace," in which worker-learners together in groups define for themselves within the process itself what it is that is meaningful and significant to learn.

HRD practitioners, as well as managers and supervisors assume more of an "enabling" role (Welton, 1991) within this environment and become resources for the worker-learners. Within this model, more attention is given to the kinds of work individuals are asked to perform and the ways in which that work is structured and organized. These issues provide opportunities for workers to engage in thoughtful, meaningful, and critical ways of learning and influencing their work environments. When HRD framed within the context of the emerging paradigm of work and as a form of adult education, it will then see itself as being about the business of fostering learning environments within the workplace.

When conceptualized as a form of adult education, the practice of HRD can make significant contributions to transforming workplaces into truly educative environments. While I agree, with Brookfield (1986) that adult educators should become more aware of HRD as a form of educational practice, the future of HRD needs to be informed by the tradition of adult education committed to furthering a just and democratic society. In such a model, the motto above the HRD manager's desk might read, "It's the democracy, stupid."

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Globalization of Human Resource Management in Government: A Cross-Cultural Perspective

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Human resource management can include two large areas: personnel management and organization development. Development functions have tended to be somewhat disregarded in traditional public personnel administration and international public administration education. Thus, I hope to shed on some light on development functions in a cross-cultural perspective. Government have centered the arena of international commerce and open competition. What can government officials do to prepare themselves for their role in the global economy? Government officials must learn not only the customs, courtesies, and protocols of their counterparts from other countries, they must also understand the national culture and mindsets of the people.

My primary objective is to answer some of the most critical questions regarding human resources in global perspective. How can executives develop a multicultural management group in the public sector? What role should human resources play in the public management of negotiation and international collaboration? To develop and manage a global organization implies developing and managing people who can think, lead, and act from a global perspective, and who must possess a "global mind" as well as "global skills." Not one or a dozen "international specialists," but a multitude of executives and managers are needed to form the core of a global agency. I believe that the process of globalization requires a progressive transformation of our thinking about the role and tools of human resource management in the public sector. The notion that human resource management can and should make a contribution to the competitive strategy of a global village is indeed what this paper is all about.

The first part of this paper deals with the significant environment of global human resource management. I look at its cultural context by relating human resource management to national cultures. The second part of this paper is devoted to specific functional aspects of human resource management that have a unique dimension in a global organization; the role of human resource management in negotiation; the training and development of global managers and executives; and finally, proposals for potential changes in public administration education to better meet emerging demands.

Cultural Context in the Globalization of Human Resource Management

Familiar aspects of organizational life such as organizational structure, leadership styles, motivation patterns, training and development models, and indeed the very important concept of human resource management, are culturally relative and, therefore, need to be reconsidered when national boundaries are crossed. To facilitate such cross-cultural adaptation, what is required is more recruitment of top managers from different areas, acculturation through carefully planned career moves, and cultural awareness training.

It is essential to recognize the ability to cope with cultural relativity as the key requirement for the global managers of today and tomorrow. According to Geert Hofstede (1980, 1984, 1991), who is a Dutch Professor who has helped identify important dimensions of national character, culture refers to the collective programming of the mind which distinguishes the members of one group or category of people from another. Hofstede identifies four dimensions of national culture: power distance, uncertainty avoidance, individualism/collectivism, and masculinity/femininity. At the agency level, differences among cultures in these four dimensions have many consequences for management practices. For example, both Power Distance and Individualism affect the type of leadership most likely to be effective in a country. According to Hofstede, the ideal leader in a culture in which Power Distance is small would be a resourceful democrat; on the other hand, the ideal leader in a culture in which Power Distance is large is a benevolent autocrat. In Collectivist cultures, leadership should respect and encourage employees' group loyalties; incentives should be given collectively, and their

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distribution should be left up to the group. In individualist cultures, individuals tend to be more mobile, and incentives should be given to individuals.

The case in the United States: A subordinate is independent enough to negotiate meaningfully with a superior (a low power distance); both the superior and the subordinate are willing to take risks (a low uncertainty avoidance); and performance is important to both (high masculinity).

Developing Leadership in Global Negotiations

Negotiation is a process in which two or more entities discuss common, as well as conflicting, interests in order to reach an agreement of mutual benefit. In international negotiations, some of the aspects that differentiate the negotiation process from culture to culture include language, cultural conditioning, negotiating styles, approaches to problem solving, implicit assumptions, gestures and facial expressions, and the role of ceremony and formality. For international negotiations to produce long-term synergy, and not just short-term solutions, individuals involved in the negotiation must be aware of the multicultural facets embedded in the process. The negotiator must understand the cultural space of his or her counterparts. I think that negotiating is a skill and it can be improved. Fisher (1980) addresses five considerations for analyzing cross-cultural negotiations: (1) the players and the situation; (2) styles of decision making; (3) national character; (4) cross-cultural noise; and (5) interpreters and translators.

Fisher's five part framework provides scholars and consultants with a launching pad for both theory-building and practical applications. These days, negotiation is a popular theme for training courses. It has even been simulated in computer programs, which use a mathematical theory of games to calculate the optimal choice in a negotiation situation. These approaches are often, however, irrelevant for international negotiations taking place between diplomats and/or politicians and/or business representatives. The American approaches are based upon both American values and objectives accepted in American society. In international negotiations, assumptions about common values and objectives can not be easily made. Every player in the game plays according to his or her own rules. The quality of intercultural encounters in international negotiations can contribute to the avoidance of unintended conflict. In addition, negotiators should be empowered to decide themselves.

Training and Development for the Global Public Manager

According to Albert Bandura (1977, 1986), social learning theory seeks to explain how we learn. This learning is tied to two types of modeling processes: "symbolic modelling," which involves observing behaviors to be imitated by hearing or reading about them or watching them performed, and "participative modelling," which involves either verbalization or actual imitation. In other words, we learn by both observation and experience. Bandura asserts that we learn through the interaction of four elements such as attention (e.g., before behavior can be modeled, the subject must notice it), retention (e.g., the modeled behavior becomes encoded as a memory), reproduction (e.g., individuals translate the symbolic representations into actions and try to imitate the modeled behavior), and incentives including the motivational processes (e.g., incentives can affect which models are observed and how much attention is paid to them). Bandura also distinguished between two types of expectations in the motivational processes: efficacy expectations and outcome expectations. Self-efficacy is the degree to which the individual believes he or she can successfully execute a particular behavior.

This paper presents social learning theory as a theoretical framework because most past empirical research on cross-cultural training has lacked theoretical grounding. Training is frequently restricted to rather limited orientation sessions and cultural briefings, often imparted via lectures, handouts or case studies and supplemented by further reading. An analysis of intercultural competence (Gertsen, 1991) noted that cognitive awareness and understanding, though important, are not the only important attributes of a successful international manager or expatriate. Black and Mendenhall (1990) suggest that the more novel the international assignment is, the more extensive interaction with host country nationals will be, and the more culturally-tough or culturally-distant the host country will be from the home country. For example, consider an individualistic, low power distance, task-oriented, tolerant of uncertainty Anglo-Saxon manager taking up an assignment in a collectivist, high power distance, relationship-oriented, uncertainty-avoiding Asian culture, to use the Hofstede (1980) framework. In such cases training and development need to be rigorous and extensive. Self-development, especially awareness of oneself, one's culture and how it impacts on one's beliefs, values and behavior--an essential part of intercultural competence--can be developed through more experiential methods. The instrumental approach corresponds with low learner autonomy over both content and process and a relatively closed strategy of training delivery, while the experiential approach refers to an open learning process with learners exercising freedom over the training program.

Among three major goals of learning, the first is access to basic data and information representing those facts which pertain to the specific work environment and relevant comprehension of professional knowledge (legislation, business processes, and sources of finance). The second is to acquire situation-specific skills and response tendencies including the skills associated with sensitivity to events (problem-solving, decisions/judgment-making skills, social skills and abilities, emotional resilience and proactivity). The third is to promote self-development including creativity, mental agility, balanced learning habits, and self-knowledge. Some useful training/learning examples are; cross-cultural sensitivity workshops, outdoor development with multi-cultural teams, field trips, action learning with a multi-cultural emphasis, job rotation involving international assignments, and multi-cultural team-building exercises.

Proposed Changes in Public Administration Education

Globalization implies many things to many people, and it has no simple, agreed-upon description. Its manifestations are different in different fields. Intellectually, among other things, it promotes conceptual revolution. Not necessarily linear, uniform, measured, and determined, the model of organic change is rather one of emergence and growth made possible by interaction, transaction, disequilibrium, and equilibration. Systems are self-regulating and capable of transformation in an environment of turbulence, dissipation, and even chaos. Gone is the certainty of laws and uniform relations. Now, transformation, multiple interpretation, and alternative patterning become the basis for understanding and constructing meanings. Open-endedness is an essential feature of the postmodern framework. Some view globalization or the postmodern framework as negative and destructive; and some see it as the latest fad; but now, many are coming to recognize it as a broad and pervasive mind shift that will bring with it challenges to find new ways of thinking and doing in various fields of human endeavor (Doll, 1993). Thus, a new version of teaching and curriculum should be developed in the era of globalization.

The globalized public administration school curriculum would be organized in a way that is different from any traditional school currently in operation. Graduates should emerge from such a program with a global mindset and a broader multidisciplinary perspective. Education in the twenty-first century will demand that faculty, students, and administrators assume the mind-sets of pioneering cosmopolites. The educational mission of the 1990s includes discovering knowledge about the managerial environment and disseminating it through teaching and publishing on an interdisciplinary scale. More courses focusing on particular applications instead of generic skills for global leadership development are necessary. Preparing students for emerging managerial challenges means breaking away from conventional models of public administration education. The key characteristics of a globalized public administration school should include cultural exposure, comparative study, problem-solving, flexibility in timing, multilingual training, team building, faculty development and exchange, and textbook and case study development.

Conclusions and Policy Implications

The field of international public administration has been characterized as being in an embryonic, preparadigm state of development. Only a few textbooks of international public administration are available and, of those, most deal primarily with a plain country study and/or description of international organizations from the structural and functional points of view. The scarcity of papers in the hypothetico-deductive category is also related to the stage of development within the field and the nature of comparative analysis. First and foremost, human resource executives need to learn about the fundamentals of global competition. They cannot assume a global strategic role without understanding global strategy. In order to become effective international partners, HRM executives must develop an understanding of what drives global competition in their businesses, how this competition affects business conditions, and what the social, political, and economic variables are that may have an impact on the agency's strategy in different parts of the world.

Secondly, a solid knowledge of strategy must be complemented by the globalization of professional expertise in both the workplace and the educational institution. This rests primarily on the acceptance and understanding of the cultural relativity of many HRM practices (i.e., in what areas is diversity in customs, norms, and values acceptable, and where is it essential to promote and defend cultural synergy?). More teaching materials must be developed.

Third, the understanding of the global strategy, cultural differences, and HR capabilities requires thorough globalization of the HR function by developing a cadre of HR professionals with an international perspective and by educating our prospective students to have a global vision at school. Presently, however, many of the international HR skills are operationally domestic oriented and deal mainly with the expatriate population and transfers of people across borders. One of the reasons that has been cited by business organizations for the low use of cross-cultural training is that Korean top managers believe that a good manager in Seoul will be effective in Brussels or Frankfurt. This is illustrated not only in the lack of training provided but also in the use of the domestic track record as the primary criterion for selecting candidates for overseas assignments. Such a culturally insensitive perspective seems to be an important reason for many faulty international human resource practices.

This paper rests on the premise that effective global human resource management is a powerful competitive weapon. Removing the competitive handicap of parochialism is an essential task facing not only human resource specialists, but line managers and executives as well. I hope that my paper highlights not only the most crucial challenges regarding the management of people in global organizations, but also provides some ideas for specific actions aimed at speeding up and deepening the globalization process. I also hope that my paper stimulates other scholars and human resource professionals to rethink the fundamental questions raised herein and to propose additional solutions.

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An Interpretive Study of the Perspectives of United States Repatriates on Repatriation and the Role of Their Employers

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In-depth interviews with United States repatriate employees and spouses reveal their perceptions of repatriation and the role of the organization in supporting repatriates. Themes that emerged from this interpretive study suggest that repatriates feel misunderstood, unappreciated, and undervalued and that organizations lose a high percentage of repatriated employees with international expertise due to the organizations' failure to help their international employees repatriate and to be prepared for their repatriation.

Hammer (1989) cited communication skills as "one of the three central dimensions viewed as important to an individual's effective functioning in a foreign culture (the other two dimensions are the ability to deal with stress and the ability to establish interpersonal relationships)" (p. 249), but employers continue to assume that repatriate employees are returning to their home culture, so there will be no cultural adjustment problems as their may be when employees go abroad to live. Employers fail to understand that for repatriates, returning to one's home culture after an absence of several years *is* returning to a foreign culture.

Problem Statement

Unfortunately for both organizations and repatriates, studies show that a significant percentage of repatriate employees begin almost immediately upon their return to search for positions in other organizations whom the repatriates feel will appreciate and utilize the international expertise they have acquired as expatriates. Research shows that approximately 25% of repatriate employees do not intend to be with the same organization within a year and that approximately the same percentage actually do leave within a year of their return. Departure of an internationally experienced repatriate employee represents a loss to the organization of significant financial investment in terms of loss of future utilization of that employee's skills and the obvious and hidden costs of replacing the employee.

Purpose Statement

Reports of research of repatriation are scarce and even more scarce are interpretive research reports or repatriation. Little has been systematically studied in terms of repatriates' perceptions of the repatriation experience. The purpose of this study was to learn the perspectives of repatriates regarding their repatriation and to interpret those perspectives within a theoretical framework in order to understand the meaning of their repatriation experience.

Research Question

This study was designed to learn about repatriation as a *lived* experience from those who are living it and to attempt to understand the meaning of the phenomenon of repatriation. Repatriation cannot be separated from intercultural communication because repatriates are entering and striving

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to adjust to a culture that typically they have not been living in for two to five years, plus if they adapted well as expatriates, they adopted aspects of their host culture. Repatriates are often products of two or more cultures and feel they belong to none. They are intercultural citizens. Phenomenology has been labeled a fruitful perspective for the study of intercultural communication (Pilotta cited in Gudykunst & Nishida, 1989). Thus, the research is viewed as a hermeneutic phenomenological study, searching for description (phenomenology) and understanding (hermeneutics) of the phenomenon of repatriation. As such, only one research question was asked: What is it like to be a repatriate?

Literature Review

The literature reveals that organizations are not fully appreciative of the psychological impact of working and living in a culture other than one's own (McFarland, 1995, 1996) or of the cultural adaptation required to return to one's own culture after having lived in a foreign culture. If repatriates had received cultural preparedness training before going abroad, they would have a base of intercultural communication skills to help them make the cultural adjustment when they return. Unfortunately, if predeparture cultural preparedness training is provided, it often is inadequate and insufficient. Brislin (1981) believes intercultural communication training should attempt to improve cognitive, affective, and behavioral performance. However, what organizations offer under the guise of intercultural communication training may provide little more than the do's and don'ts of the target culture. Rarely, does it deliver underlying theories that allow the principles of intercultural communication to be applied to the variety of personalities that are in any culture and to be transferred to other cultures. Cultural preparation and adjustment are issues of human resource development and business outcomes for repatriates just as for expatriates.

Human Resource Development Perspective. When repatriates return, they find that the culture of their organizations and the social systems they left behind have changed or are not the same as remembered. They return to a *foreign* culture. Combined with factors of their expatriation experience, the effect of finding that their home culture is now a foreign culture can produce culture shock far more severe than the culture shock of living abroad where differences and lack of understanding of the culture were expected. Adaptation can be much more difficult.

Adaptation to a culture becomes synonymous with successful communication within that culture (Gudykunst & Kim, 1992) because culture *is* communication (Hall, 1981). Knowing the culture is more than being able to speak the language fluently as with repatriates returning to their home culture and language. Knowing the culture includes understanding the reasons behind communication styles and behaviors. Jawaharlal Nehru emphasized that "communication is. . .an *emotional awareness* of other people" (cited in Adler, 1991). Emotional awareness by both repatriates and their employers and social system members enables repatriates' to adjust to the culture they encounter upon reentry. Intercultural communication training can help people to be culturally sensitive and aware, and that, in turn, contributes to cultural adjustment.

Business Perspective. "Culture is not peripheral to business—it's central to business. It permeates every aspect of business" (Guptara, 1990, p. 13). Culture shock is costly. Repatriate employees who find themselves in organizations that are insensitive to culture shock and issues of repatriation also find that their international experience and expertise is undervalued and underutilized. They are frustrated that their organizations shoehorn them into domestic-related positions just to provide them a job. As a result, almost one-quarter of repatriated employees leave their companies within one year of coming home (McFarland, 1995). They take with them valuable knowledge and go to competitors. If one in four repatriates leaves the firm each year, there can be no long-term return on the investment and there will be significant cost incurred to replace these employees.

Due to lack of cultural sensitivity and awareness, employers do not realize that repatriate employees are not the same people that they were when they left; that repatriates have experienced self-growth and have acquired international expertise and professional skills; and that they are experiencing culture shock. Repatriates and employers need intercultural communication training, and repatriates need psychological support as well as technical support. However, a 1991 Dartmouth College study estimates that 90% of U.S. companies offer less than three hours of training, total, for the return home (Engen, 1995). Given that American multinational corporations spend approximately $1,000,000 on each expatriate over the duration of a three-to-four year foreign assignment (cited in Black, 1992), the cost of a repatriation program to aid repatriates in adjusting to their home culture and reintegrating into the corporation is minimal.

Theoretical Framework

By definition, repatriation is returning to one's home culture. Successful repatriation is based on adaptation within that system, which, in turn, is a function of communication. As such, the theoretical framework is built of communication, culture, and general systems theories.

Communication Theory. A basic communication model (cited in Adler, 1991) indicates that the message sent is never the same as the message received. The messages received by listeners/observers are decoded and filtered through their personal perspectives. Those perspectives are determined by their experiences, so all interpretations of communications are made through the lens of one's experiences. When the lenses are different as they are between members of different cultures, interpretations are different; however, when awareness and sensitivity are heightened, the lenses of the message sender and the message recipient are more nearly aligned, and communication competence is heightened.

Hofstede's Theory of Cultural Dimensions. Hofstede's (1984, 1991) theory of cultural dimensions assists in characterizing, predicting, identifying, and interpreting general behavior within and among organizations. Hofstede's (1984) four cultural dimensions of (1) individualism versus collectivism, (2) power distance, (3) uncertainty avoidance, and (4) masculinity versus femininity stem from a six-year study in 50 cultures.

Individualism versus Collectivism. Individualism pertains to organizations in which the ties between individuals and between individuals and the organization are loose: Collectivism, on the opposite pole of this continuum, pertains to organizations in which people are integrated into strong, cohesive ingroups, which protect them in exchange for loyalty (Hofstede, 1984).

Power Distance. Power distance is the measure of the degree of inequality in organizations. It is defined as the extent to which the less powerful members of organizations expect and accept that power is distributed unequally (Hofstede, 1984, 1991).

Uncertainty Avoidance. The essence of uncertainty is that it is a subjective experience, a feeling that is acquired and learned. Feelings and ways of coping with them belong to cultural heritage, are reflected in collectively held values of members of an organization, and lead to collective patterns of behavior in one organization (Hofstede, 1984).

Masculinity versus Femininity. The masculinity index refers to qualities that were historically associated with the male and the female genders. Some of these qualities are assertiveness, competition, and toughness for the male gender and nurturance, cooperation, and relationship-building for the female gender (Hofstede, 1984). These characteristics are pronounced in organizations.

General Systems Theory. General systems theory "[1] provides a perspective and vantage point for thinking about the organization. . . . [2] directs us to consider and influence the processes that are unique to self-aware systems. . . . and [3] helps us to adapt a big-picture view of development" (McLagan, 1989, pp. 78, 79). Cultural preparedness is based on systems theory assumptions and focuses on the intercultural communication processes that take place when individuals from one culture relocate to another culture (Gudykunst & Kim, 1992).

Research Methodology

This research is an interpretive study of repatriation in the Midwest United States.

Informants. Names of repatriates were acquired from top-level international human resource development professionals. The repatriate informants were connected directly as employees or indirectly as spouses to multinational organizations in Minnesota. Ages of the informants ranged from the late twenties to the mid forties. All except one had repatriate children. All had been abroad from 1 to 5 years and had been back in the United States from one to two years. Their foreign assignments were in Africa, Japan, and western Europe.

Data Collection. As recommended by Spradley (1979), Dobbert (1989), and van Manen (1990), unstructured, audio-taped, face-to-face interviews were used to gather data and to provide detailed, expanded accounts in verbatim records.

Data Analysis. The following strategies for discovering themes by using linguistic symbols have been suggested by Spradley, Tesch, Dobbert, and van Manen (1979, 1987, 1989, 1990, respectively) (sometimes using different terms for the same processes) and were used for thematic analysis in this study: transcription, highlighting, summarization, tree diagramming, domain analysis, taxonomic analysis, and componential analysis.

Findings and Interpretation

Repatriates report that repatriation is overwhelming, confusing, tiring, challenging, exciting, lonesome, and more difficult than expatriation. The findings of this study indicate that although organizations are beginning to address the issues of repatriation, their efforts are frequently disorganized, unstructured, and inadequate, even when employing outside repatriation consultants. Repatriates desire assistance in their repatriation, but, failing to receive effective support from their organizations, strive to deal with the repatriation process themselves and to support each other. Often this method results in unnecessarily disconnected and prolonged attempts during which repatriates suffer physically and emotionally and choose to leave the organizations in which they feel undervalued and underutilized. The following two metathemes emerged from the data analysis.

***Metatheme One**. Open communication between organizations and their employees and among repatriates and their social system members is necessary for successful repatriation.*

It is well known that organizations provide satisfactory physical support for their expatriates and repatriates in terms of technical assistance and relocation. However, some needs that continually arose in the repatriate interviews were their needs for more communication with their organizations and people who were genuinely interested in their experiences; psychological support; and confirmation that they are an integral part of the organizational and international system.

***Metatheme Two**. Organizations can enable successful repatriation by implementing a specific, supervised, structured repatriation program that begins before expatriation and includes intercultural communication training.*

Table 1. lists some suggestions made by informants for an effective repatriation program.

Table 1. Informants' Suggestions for Repatriation Program Content

Time Period	Suggestions
Before Expatriation	• Intercultural communication training • Negotiation of employment contracts for expatriation and repatriation • Formation of a sponsorship *position* in the organization to maintain contact between expatriates and the organization • Transition management counseling and assistance • Financial counseling
During Expatriation	• A process to keep expatriate's image in consciousness of the organization; e.g. articles and pictures in newsletters and on internet. • Opportunity to renegotiate repatriation employment contract

During Expatriation (continued)	• Detailed, up-to-date resources on home-culture housing, school systems, living costs, healthcare costs, educational opportunities • Ample compensated time to house hunt in States • Ample compensated time for bringing psychological closure to the expatriate experience • Facilitation for spouse and children • Frequent communication with expatriates
After Reentry	• Review of intercultural communication training comparing host culture with U.S. culture • Business and social opportunities to promote integration into organization • Honest debriefings regarding organizational climate and expectations • Psychological counseling • Safe environment for discussion and questions • Up-dated resources on housing, school systems, living costs, healthcare costs, educational opportunities, international social organizations • Ample compensated time for making family arrangements • Facilitation for spouse and children • Cultural adaptation mentor who is employed and supervised by organization, not a volunteer • Opportunities for employee and spouse to use intercultural knowledge and international expertise • Frequent communication with repatriates • Assistance for at least six months

Following are observations made by the repatriate informants and the cultural dimensions that aid in explaining the observed behaviors. When the underlying meanings of behaviors are understood from a cultural perspective, one can more easily view them as behaviors that are not personal affronts to the observer, which helps to defuse the situation and make it more readily manageable. Typically, the greatest incidences of conflict between cultures occurs within the femininity/masculinity and the power distance dimensions, which is the case in this study, as well. With each cultural dimension is the value assigned to the United States by Hofstede.

Uncertainty Avoidance (UA) (46). The uncertainty avoidance index of 46 falls near the midpoint of the continuum, indicating that the United States culture is not particularly anxious; however, there is potential for a low-to-medium level of anxiety. This potential is reflected in organizational cultures as employees suffer through downsizing, reorganization, reengineering, relocation, and other major changes, as well as in the responses of friends.

> Culturally the company has changed. There's a lot of anxiety about security and wellness of the business that wasn't there when we left.--*Employee*
>
> People think they are lucky to have a job. I don't feel I have as much control over my destiny as I did.--*Employee*
>
> They [friends] can't imagine everyday life in Austria. It's all very mysterious and frightening.--*Employee*

Power Distance (PD) (40). The power distance index of 40 is considered a rather low index when compared to that of some other cultures; but it allows potential for power displays.

> There were turf issues going on, and I didn't get the job that I thought was a done deal. They bought me off, gave me a promotion. I was really mad. I was ticked off for a long time.--*Employee*

Masculinity/Femininity (MAS) (62). Although far from the highest masculinity index of 95 (attributed to Japan), a masculinity index of 62 is considered to be rather highly masculine, definitely not nurturing as associated with lower indices. This index is reflected in the lack of training and support, and the drive to work harder in order to achieve and acquire more.

> Companies are losing [repatriate] employees because they are not making the effort to help them adjust.--*Spouse*
>
> The relationships you had with friends before you left are pretty much gone.--*Spouse*
>
> I don't know why companies think they can send someone someplace for five years, give them that degree of responsibility and excitement in their life, give them that broad experience, and then expect to bring them back to corporate headquarters and throw them in a cubicle.--*Spouse*
>
> For preparation to go abroad, we were handed a notebook and told, "Have fun."--*Spouse*
>
> We had a book--a small book that we worked through just to give us things to think about. But after we were back a month, our synodical mission sent us to Tuscarora Resource Center for a week of counseling.--*Employee*
>
> Corporate headquarters doesn't have a clue what real life is all about. They just sit over there and do their little thing and complain that they don't have enough resources.--*Spouse*
>
> When you come back, you're overhead. Human Resources just wants to get rid of the overhead. Be proactive. Plan for yourself. They aren't there for you!--*Employee*
>
> When we came back, my wife, who gave up a career to expatriate, decided to ensure stability for the children by having at least one parent in the house. And it hasn't been easy; there are a lot of cultural pressures on my wife. The implication is if you stay home, you aren't doing anything.--*Employee*
>
> Americans have a culture of "What can I get?" rather than "Who am I?"--*Employee*
>
> You still can make it [your goal] happen. That's called salesmanship. It's called get a plan, think about it, sell it. Everybody today has to be a salesman."--*Employee*
>
> I read a couple books on reentry. I don't think I actually did a lot of those things, though.--*Spouse*

Individualism/Collectivism (IDV) (91). The United States has the highest individualism index of all the cultures investigated (Hofstede, 1984). The high value is reflected in everyday behaviors of individuals: the focus on oneself or immediate family; the out-of-sight, out-of-mind mindset; and the male-female division, for example.

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> Anybody who goes over on a foreign assignment and thinks somebody in the company is going to keep track of you, that's the biggest farce there is.--*Employee*
>
> The first thing they [repatriation consultants] did was put the men by themselves and put the women by themselves, and we didn't have any interaction. I would have liked to have heard some honesty from the spouses of the guys I was with.--*Employee*
>
> About the repatriation workshop, the only time we were all together, husbands and wives, was when the consultant was lecturing on facts and statistics. It would have been helpful for me to hear that other men were experiencing the same feelings that Doug was. We should have been in this together, not in separate rooms.--*Spouse*
>
> Friends aren't really interested in your international experiences. They tune you out.--*Employee*
>
> Friends who have never been to Europe don't really care about my experiences. They thought I was a little strange. They didn't really care to find out too much about what I've been doing.--*Employee*
>
> There's a period when you are repatriating that there's a void in meaningful friendships.--*Employee*
>
> It's "Oh, really," and then off to the next subject. People don't know how to relate, so they just don't.--*Employee*
>
> People just don't talk to each other as much as I would like to.--*Spouse*

If the repatriates had had intercultural communication training that included a theoretical foundation for application and transfer of learning, they would have been able to predict and understand many of the behaviors they witnessed in their organizations during their repatriation. If members of the organization had had intercultural communication training, they could have been aware of and sensitive to the needs of repatriates, who, in addition to having changed due to their international experiences, must adjust to organizational and societal cultures that have also changed in their absence. It is important to understand that repatriates are no longer the same as when they went abroad; nor are the cultures to which they return.

Conclusions and Future Directions for Research

This study suggests that the large organizations represented herein do not view repatriation as a critically important process for their employees, do not recognize their role in enhancing the process, and do not understand or appreciate the cost to organizations of ignoring repatriation and the international expertise of repatriates. The metathemes that emerged from the data analysis imply avenues for future research in terms of designing and developing organizational repatriation programs; intercultural communication training for repatriates as opposed to that for expatriates; improving the design, development, and implementation of training and debriefing sessions conducted by consultants; and the retention rate of repatriate employees who have participated in repatriation assistance programs..

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Managerial Learning in the Transition to a Free Market Economy in Romanian Private Companies

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This paper reports the results of a pilot study on the managerial learning of senior managers of small Romanian private companies. The purpose of this study is to examine critical learning experiences of senior managers of small Romanian private companies, which enable them to lead successfully in the transition to a free market economy, in order to determine what triggered their learning, what learning strategies they used, and how they make meaning of their learning experiences. To attain the purpose of the study a qualitative research methodology has been selected applying the critical incident technique through in-depth interviews of selected senior managers. Findings based on three critical incidents described by a woman senior manager in the pilot study are reported and implications for management development and HRD are discussed.

In the politically turmoiled and economically destroyed former Eastern Bloc countries, a free market order is viewed as a quick and efficient way towards recovery. According to Nagy (1992), the countries of this region are faced with two enormous tasks. The first one - the creation of a new political regime incorporating a multiparty system and parliamentary democracy - is in the process of completion; while the second one - the transition from a centrally planned economy to a free market economy - is far from being completed.

As Sachs (1990, 1990a, 1991) has pointed out, economic liberalization, macroeconomic stabilization, and privatization are necessary conditions for a transition to a free market economy. Nevertheless, they are not sufficient. It is not enough to create the mechanism and institutions of a market economy if economic culture and entrepreneurial thinking are lacking. Since individual human decision-makers are the moving force behind all economic actions, the sufficiency condition for the transition will be satisfied by the development of a managerial professional class (Cseh, 1992).

According to Nagy (1992) and Cseh (1992), management development should be regarded as an integral and very important part of the historical changes that are now taking place in the former Eastern Bloc countries. Mugur Isarescu, the governor of the central bank in Romania, likes to attribute the country's improving economic performance to what he describes as the "spontaneous restructuring" of the economy as business people and managers of state and private firms learn to adapt to market mechanisms (Anonymous, 1995). This study is rooted in this spontaneous restructuring. Leading that restructuring is Romania's still small, but fast growing, private sector. Its share of gross domestic product (GDP) has grown from nil in 1989 to 35% in 1994, when it accounted for an estimated 51% of employment. Most of these firms are small to mid-size and represent the agricultural, trade, and service factors (Cseh, 1992; Anonymous, 1995). As Anton, Danciu, and Mitu (1996) pointed out, the profit made by the private sector in 1993 was 4.6 times larger than that of the state sector. They found that "the private sector proved it was capable of absorbing a large share of the labor force made available by public enterprises and of offering equal or even higher salaries to its employees. Private owners are an economic force that is proving to have better skills in administering their assets." (p.72).

Thus, a crucial role in the economic restructuring is played by the senior managers of these small and mid-size companies who are learning to adapt to market mechanisms and to cope with the radical changes characterizing the transitional period from a centrally planned economy

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to a free market economy of Romania. Although these managers are now expected to compete in a new market oriented environment, a review of the current literature has revealed that insufficient attention has been given to the managerial concerns implied in the transition process to a free market economy in Romania (Nicolescu, 1992; Cseh, 1992). In order to develop innovative management development approaches to help managers acquire the needed skills to manage in this transitional period, it is imperative to understand how managers learn what they need to know in order to successfully run their businesses in this new environment. No evidence was found of studies of this nature in Romania.

Theoretical Framework

The managerial learning literature shows that learning outside of a formal classroom setting has great importance in managerial learning. Learning from experience, trial and error, social learning, self-directed learning were just a few of the modalities surfacing in the reviewed studies (Verlander, 1992; Burgoyne & Hodgson, 1983; Lombardo, 1985; Zemke, 1985; Stuart, 1986; Akin, 1987; McCall, Lombardo, & Morrison, 1988; Dechant, 1989; Stuart, 1989; Marsick & Watkins, 1990; Kops, 1993; Young, 1994; Burgoyne, 1995).

In the wake of all the above evidence, the main assumption of this study is that Romanian managers of private enterprises learn their jobs primarily through informal, incidental means. The theoretical framework of this study is therefore based on Marsick and Watkins's (1990, 1996) and Watkins and Marsick's (1992), theory of informal and incidental learning in the workplace. Informed by their research, the authors noted that most learning in the workplace takes place either on the job, in informal settings, or coincident to other work tasks. Learning results from internal or external triggers which may include surprises, new experiences, accidents, discrepancies between what we expect to happen and what does happen, problems, etc. Strategies or actions are then selected based on one's cognitive and affective understanding by filtering the information through one's selective perceptions, values, beliefs, and framing of the situation. The actions taken can be constrained by one's capacity to act in terms of necessary skills or authority needed to act. Following the action, one may observe or not what happened. In the case of observing what happened, individuals often attribute the undesirable consequences to external forces, and the desirable ones to their own actions. Out of the consequences and causal attributions, meaning is made of the experience and what is learned from the experience is retained.

Purpose of the Study and Research Questions

The purpose of this study is to examine critical learning experiences of senior managers of small Romanian private companies, which enable them to lead successfully in the transition to a free market economy, in order to determine what triggered their learning, what learning strategies they used, and how they make meaning of their learning experiences.

In order to attain the purpose of the study, the following research questions were investigated:

1. What triggered the managers' engagement in the learning activity?
2. How do senior managers of small Romanian private companies learn what they need to know to run their businesses successfully in the new free market economy?
3. How do managers make meaning of their learning experiences?

Methodology

In studying managerial learning in the transition to a free market economy in Romania, a qualitative research methodology has been selected. The study is the first of its kind in Romania which explains its exploratory, descriptive nature. The critical incident technique, which according

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to Yukl (1981) is especially useful in exploratory research designs to examine very specific, situational aspects of managerial behavior, has been selected as the research method for this study. This technique has been applied in this study through in-depth interviews of selected senior managers of successful small Romanian private companies.

The target population selected for this study is that of senior managers of successful small (2-99 employees) Romanian private companies. To select the sample for this study, the top lists of successful private companies of three Romanian counties, Bucharest, and the national list were consulted. These lists are published by the Chamber of Commerce of each county and of Bucharest and a top national list is also compiled and published. Senior managers of small private Romanian companies from the top lists with at least three years of existence were then selected for this study using the snowball or chain sampling technique. Each manager was asked to describe at least three critical incidents according to an interview guide which they received at the time they agreed to participate in the study.

The sample size was determined based primarily on informational considerations (to obtain in-depth description through information rich critical incidents) , and secondarily by the time (limited by the doctoral dissertation requirements) and resources (as the study is funded by the researcher) available to the researcher. According to Patton (1990) "The validity, meaningfulness, and insights generated from qualitative inquiry have more to do with the information-richness of the cases selected and the observational/analytical capabilities of the researcher than with the sample size" (p. 185). Based on these considerations and informed by the literature (where the number of incidents varies from tens to thousands depending upon the depth of the study), the researcher decided on a sample size of fifteen to twenty managers from three counties of the region called Transylvania and from Bucharest, the capital of Romania and its surroundings. These two regions have been selected because the researcher was born and grew up in Transylvania, worked and has an extensive network of relationships in both regions. Managers were selected to represent both genders and the nationalities (Hungarian and Romanian) specific to these regions. Eighteen managers were selected by the researcher with the expectation of generating 40 to 60 critical incidents (the unit of analysis) which is a relevant sample in the critical incident literature.

The researcher traveled to Romania to identify the participants in the study and to gather data. In order to prepare the design for this study, the researcher had two in-depth telephone conversations from the United States with a senior manager of a joint venture in Transylvania and a senior manager of a private Romanian company in Bucharest. During these conversations, the researcher discussed the topic of her research with the two managers, the sampling process, the data gathering process, and the actual economic situation in Romania. The managers showed enthusiasm and understanding for the topic and offered their help in further networking and sample selection. The manager from Bucharest agreed to participate in a pilot study and a date was set for a telephone interview for this purpose.

All interviews were tape recorded and fieldnotes and memos were taken by the researcher immediately after each interview. The recorded interviews are in the process of being transcribed, translated, and analyzed by the researcher who is a native Romanian of Hungarian nationality, speaking both languages at mother tongue level. She is multilingual, has learned English in childhood, and has used it extensively in her work by translating, interpreting, and tutoring from English to Romanian and Hungarian, and vice-versa. One of the major difficulties in undertaking this type of translation arises from the fact that the language of management today is "largely English - and American English at that;" (Haire, Ghiselli, and Porter, 1966, p. 4). Although it is impossible to achieve a word-for-word translation, the researcher makes an attempt to keep the rendering as consistent as possible. In order to counteract the above mentioned problems characterizing any translation, parts of the translated interviews are retranslated by at least one person who is native Romanian and when necessary of Hungarian nationality who speaks fluent English and adjustments are made when necessary. The research data is analyzed using the content analysis approach.

This paper reports the preliminary findings of this study based on the pilot telephone interview with a woman senior manager of a small tourism/agribusiness Romanian private company with headquarters in Bucharest and offices in a region at the foot of the Carpathian Mountains.

During the approximately one hour interview, the participant described three critical incidents from her day-to-day work as a senior manager of a company which founded in 1992 managed to become successful amidst the challenges of the transitional period to a free market economy in Romania.

Findings

Data analysis of the three critical incidents revealed that the manager's learning was primarily informal and incidental and it was a result of both internal and external triggers according to Marsick and Watkins's (1990, 1996) and Watkins and Marsick's (1992) theory of informal and incidental learning. The analysis also uncovered several learning strategies used by the manager and what was retained from these learning experiences. Although the manager learned mainly informally, she also reported in one instance of using formal means of learning (e.g. Open University).

Triggers of Learning. In one of the incidents described by the manager, her learning was triggered by a discrepancy between what was offered to the clients and what the clients expected. As the manager related the situation: "There was a moment when we had to surpass the stage - at the beginning we offered just room and board, we spent a lot of time on building up a network of houses which could offer board, houses which could offer services. So, we spent a lot of time on this, we did marketing and people began to come. And there came the moment when they were coming, but were not satisfied, and we noticed that, too. It was clear that they did not want just to sleep and eat, they wanted to walk, they wanted a variety of programs, and it was very difficult suddenly to provide these for so many people, for us to be able to offer them diverse programs. Some of them wanted more sport, more nature, to walk, to hike, mountaineering, others wanted programs of more statical nature, for example bus tours to visit touristic sights. Therefore, from the point of view of the time, you know, it was an explosion so to speak."

Another external trigger came as a consequence of the transition to a free market economy in Romania. The manager describes the impact on her business of a ten year exemption of taxes for the owners who rented their houses for rural tourism which then "had suddenly produced a significant increase in the number of those who wished to enter in the housing renting circuit. So, it was connected to the legislation, a very powerful change for the better."

Although external triggers seemed to prevail in the manager's descriptions, she also revealed in a follow-up discussion an internal trigger - personal growth - which guided her steps toward a course at the Open University. She also began her studies toward a doctoral degree. The need for personal growth was one of the seven learning themes discerned by Akin (1987) in his study of 60 managers' varieties of learning.

Learning Strategies. Most of the learning strategies used by the manager were informal in nature (learning from others through collaboration, modeling, networking, relationships) and she also hinted toward the benefits of learning incidentally when she referred to the importance of her participation at different reunions, conferences: "you have contact, you see the experiences of other countries, organizations and you never know when they can be useful." The manager also mentioned her interest in formal training triggered by her need for personal growth. The learning strategies which emerged from the research data were categorized as collaboration, modeling, and networking, and all of them were implemented through relationships with others. Another category is that of formal learning.

Collaboration. Faced with an urgent problem to be solved (customer satisfaction) and guided by her belief that "it is clear that neither of us can be an expert in several fields, so it is good to meet people who each in their fields knows things better," the manager started a collaboration with teachers, doctors, students who knew the region, culture, history, nature. Talking about her feelings, she said: "It is normal to worry and I had to find solutions on the spot and very quickly and then I began this system of collaboration." The lack of time to stop and ponder in this period of rapid changes in Romania was mentioned again in her stories: "Unfortunately because of lack of time, even now I am not in a position so to speak, to sit and think 'let's make a plan', many times we are too caught in the midst of the events."

The manager also mentioned the importance of learning from her mother who is her business partner and the benefits of the collaboration with the Tourism Ministry: "...we had to work it out together...they [Tourism Ministry] also had ideas and especially about how to formulate them [laws], how to put them in practice, how to exercise control in the future. So, the houses will be homologated, but this is not all of it, we have to take care and to be also concerned for the future, to check the maintenance of the initial high quality standards, you know. They can be good and after a year not good anymore. So, the idea of continuous control came from the Ministry."

Modeling. Modeling was another informal learning strategy used by the manager in order to cope with one of her critical incidents. As she was telling in her description of an incident: "I had to learn myself and I was greatly inspired by the French model. There was also the German one, but I found the French model closer to the situation in Romania. And I studied, of course the German one, too, and in fact I studied the classification criteria of many countries, Austria, Germany, Belgium, and France. I studied in depth both theoretically, I mean I practically read them, and I also had the chance to go and see. There are different types, and this is why I am saying that the French model is closer to ours, because there are different types. Some of them think that the inspection of the houses should be done by an outsider not from inside of the organization. Others, like France, and we also adopted this model, think that you need somebody from the organization and especially an insider, because you have to make people, the owners aware that they have to have high quality standards, you don't need somebody from outside to come to tell you this."

Networking. Networking was considered by the manager a very useful learning strategy for building relationships as well as for gathering and receiving information. She describes these events in the following: "These are very useful for me - these networks of different types and international associations...On one hand, they [associations] are very often editing some informational bulletins, twice per month depending on the events, and on the other hand they also edit a journal, 'Management', which is a monthly one. So, a lot of information. And besides these two types of publications which are periodicals, when it is the case we are informed about some other events." And she highlights that: "As they are saying, the coffee breaks are sometimes more important...Of course, it is important to listen to the presentations in general as a base for the beginning, but the discussions which follow, direct ones, are very efficient because you understand better what is happening."

Formal Learning. Describing her formal learning which is described by Marsick and Watkins (1990) as "typically institutionally sponsored, classroom based or highly structured" (p. 12), the manager remembers "about these Open University courses which I found very useful, courses at distance... I took the "Effective Management" course. Yes, it was competitive and I found it very useful." Referring to one of the things she learned "and a very important one, which may seem minor, but it changed a lot the way I think, is that you have to give priority to what is important and not to what is urgent. And I also learned, I heard the first time about this, about 'body language', so non-verbal communication which is also very important for me especially in my field of activity - services - where you work with people."

These examples illustrate how this manager learned as she worked to build her private business in the new free market Romanian economy. In the section which follows, a number of themes regarding what this manager has learned from these experiences will be presented.

Constructing Meaning from Learning Experiences: Making the Tacit Explicit. It is the tacit attributions, beliefs, and assumptions which make up incidental learning. In the following section a number of themes emerged from analysing this manager meaning making around her learning in the transition to a free market economy.

You Can't Make the Transition Alone. In reflecting of what she have learned from the incident when she had to come up with a quick solution to satisfy her customers' expectations, the manager recalled: "I realized that I can not do it alone and I thought about involving others, some people who were already ready, as I could not take people and begin to train them."

You Need a Working Plan. Referring to the same "customer satisfaction" incident, the manager concluded: "What can I tell you that I learned, so this idea that a working plan has to be still done, so first a general strategy and then, let's say an action plan and you have to try to forecast, in our case what a tourist would wish for, to try to forecast and to offer them some possibilities, some choices."

You Have to Take Risks and Teach Others about Risk Taking. Talking about the importance of risk taking and the necessity of teaching the owners of the houses who are members of her tourism agency about risk taking in the new economic environment, the manager remembers of some situations in the following: "...we are trying to promote [the business], and we are doing it, to bring in tourists, for the people [owners of the houses] to have some profit so both the agency and the people should have profit. But we can not guarantee that we will have tourists for maximum occupancy. And a lot of people did not understood this. At the beginning it was more difficult, being a risk for them, too. So, ok you will rent you house or you will try to rent it, but it is not sure that you will have profit. Therefore, we had to convince people that in every activity there is an inherent risk and especially at the beginning. Therefore, the profit can not come immediately, you need to make an investment, as small as it is to be able to recuperate. Anyway, tourism is a seasonal activity so you can't count on a permanent flow of tourists for 12 months. I am talking about rural tourism where most of the people come for vacation or to take a rest. It is not like in a city, where they can come for conferences or whatever other reason and you permanently have tourists. ...They couldn't understand that an entrepreneur has to take a risk, has to be more involved, and that each house has its specific features and therefore rural tourism has to be approached individually. It is not like in a hotel where everything is the same.

You Are Personally Responsible. Reflecting on her practice as a manager in the transition to a free market economy in Romania, the manager recalled: "What can I tell you, as we are in this situation, as a manager you have to take decisions alone while before [she is referring to the centrally planned economy, the communist society] everything was imposed on us, you know this very well. So, I had to take decisions alone and in a short time therefore, this had an influence on us. And in many cases, connected to this free-market economy, in many cases you have to risk so, you can not tell for sure if it will be right. There are big chances for success and for failure, too. You have to assume responsibility on that moment for what you are doing. It is not too good either, that in many cases as a manager you have to be responsible of others, so your decisions good or bad depend on the performance of the other persons, this being a big responsibility, too."

As these themes emerged from the pilot study, it remains to be seen if the themes identified will hold in the analysis of the remaining data.

Conclusions and Implications for HRD

Understanding the nature of the learning of Romanian private companies' senior managers as they transition to a free market economy may reveal ways to augment and support managers' learning, and it may also provide useful hints for designing and implementing management training and development programs in this country. As the 1990s are offering a greater opening to direct foreign trade and foreign investment in Romania, the results of this study will also help global human resource developers transfer management learning theories and practices across cultural and national boundaries.

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The Status of Human Resource Development in French Companies

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Human Resource Development (HRD) activities were identified in France. A literature review focused on organizational changes and training practices and policies. A survey questionnaire was sent to the top 100 French companies (with 91 delivered) to determine the characteristics of "Ressources Humaines" (RH) departments and professionals, external and internal environments for RH, and specific RH activities. The total response rate was 65.9%.

Human Resource Development (HRD) is becoming increasingly complex. HRD is becoming the focus of economic and social debates because it involves a broader variety of employees rather than a small section of traditional personnel management professionals. One definition of HRD commonly accepted in the United States defines it as comprising the areas of career development, organization development, and training and development (McLagan, 1989).

Several studies designed to look at HRD activities in different countries all underline the fact that, although the majority of HRD principles applied internationally originated in the U.S., the nature and purposes of HRD activities differ in each country. It appears that the definition of HRD terms vary from one country to another, and that national differences are a crucial factor in determining the ways in which HRD professionals work (e.g., Okongwu, 1995; Yang & McLean, 1994). It is then important to remember that the definitions of HRD that have been adopted in the United States, and the way in which they are delivered, do not directly apply to other systems.

In France, the boundaries between HRD and Human Resource Management remain unclear. The "Ressources Humaines" (Human Resources) profession seems to cover all aspects of acquiring, developing, and sustaining a strong workforce. There are several factors that affect the design and development of future trends in organization development, career development, and training and development in France. This study provides an analysis of these factors and describes at the same time the trends and specifics of RH activities in French firms.

Statement of the Problem

This study was designed to determine the nature of Ressources Humaines (RH) activities in France. The research focused on the following questions:

1. What are the characteristics of RH departments and professionals?
2. What are the external and internal environments for RH?
3. What are the specific RH activities?

The first focus, characteristics of RH professionals and departments, covered the issues of education and training of RH professionals, job definition, salary, work with external consultants/organizations, and job class. The second focus, external and internal environments for RH, looked at the status of RH within organizations, budget allocated to RH functions, role in organizational decision making, logistics of RH departments, support within organizations, external influences, challenges, and ethical framework of RH activities. Finally, the third focus,

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specific RH activities, addressed areas of interventions, types of training, number of trainees and hours of training per employee, sources for RH tools and programs, and current and future areas of interventions. A final goal of the study was to compare the specifics of RH professionals and activities in France with those of HRD in Korea, the U.S., and the People's Republic of China, based on the availability of studies on Human Resource Development in those three countries:

4. Are there any similarities between the characteristics of RH/HRD in France and Korea, the United States, and the People's Republic of China?

Definition

The study presents those aspects of Ressources Humaines (RH) in France that are concerned with training and development, organization development, and career development, so as to fit McLagan's (1989) definition of Human Resource Development adopted by the American Society for Training and Development. Ressources Humaines (RH) is the term most like HRD in France.

Literature Review

The literature review covered three areas. The first area addressed the specifics of French Ressources Humaines. The second area covered organizational changes in French firms and the impact they have on RH practices. Finally, a third area focused on developments and trends in training in France and which aspects of the French system affect these developments.

Specifics of French Ressources Humaines. Ressources Humaines covers a wide variety of activities: personnel management, training, "social development," improvement of working conditions, labor relations, internal communication, external relations, and advice to management on personnel management (Peretti, 1990). RH departments essentially exist in large firms (1,000 or more employees). Most RH departments consist of only a few professionals. RH professionals are generalists who address all areas of RH and who have a strategic importance in the organization (Onisep Avenirs, 1994). In addition, many external consultants/organizations exist, who generally provide specialized services to French firms.

RH department activities are shaped by internal and external factors, from personnel representatives to government agencies dedicated to employment issues. The complexity of the profession and the continuous interaction with external and internal elements are prominent challenges to RH professionals.

Organizational Changes: Current Practices and New Concerns. The primary concerns for RH professionals are the trend away from work ethics in the workforce, and the rigid bureaucracy and hierarchy of traditional management. Participatory schemes of work organization are unsuccessful and workers distrust consultative systems. Consequently, the focus for RH is to reduce cynicism towards employee empowerment efforts and to stress the importance of free flow of information throughout organizations. Another trend reveals that RH practices are now being developed independently of state regulations. Today, the very elaborate labor laws that shape RH activities are balanced by increased power and independence on the part of local agencies and private businesses. Overall, the top concerns for RH professionals are to develop communication at all levels of the organization, to deal with the new work organization, and to develop RH activities independently of government regulations.

Training Policies and Practices. A literature review was conducted on development and trends in training in France and the aspects of the French system that affect these developments. It showed that the vocational education system is restructuring to focus on skills currently in demand in the new job market. Also, companies have started dialogues with vocational schools, the government, and training centers in an effort to provide more qualifications among the young (Oeschlin, 1987). Managers serve as trainers in vocational schools and training institutions. Overall, the focus is on preparing flexible individuals and redistributing responsibilities for designing training to meet current needs.

Companies must structure their training policies and practices according to strict laws that require them to reserve a minimum of 1.3% of their wages for training. An estimated $22 billion are spent every year on training in France. There are approximately 400-500 committees responsible for administering training money collected from companies (Pollack, 1994).

Several new trends are developing: more practical experience for school-based training, increase in in-company training, easier access to training information and assistance, new national regulations to increase the number of women employees trained, efforts to counteract the high illiteracy level, and an increase in decision-making power for the regions.

Research Methodology

Population and Sample. The study involved a sample of 100 French firms which had been ranked as the top 100 organizations in France for the year 1994 (L'Expansion, 1994). In spite of an extensive literature review in France, no information was available on whether the 100 organizations had an RH department or internal RH professionals. Due to the lack of a database on RH professionals, it was decided to send the questionnaires to the "Ressources Humaines/Personnel" (Human Resources/Personnel) department in each organization.

Development of the questionnaire. A major challenge in the design of the questionnaire was to develop items that could be understood outside of the U.S.. In addition, the majority if specific HRD terms, originated in the U.S. and only recently introduced in France, have not been translated into French. In a concern to respect the current trend to protect the French language, HRD terms were translated into French whenever possible. The questionnaire was first written in English, then translated into French. After the translation was completed, a French HRD professional residing in the U.S. counter-translated the questionnaire into English. The counter-translation, as well as the French version of the questionnaire, were then checked by French graduate students in the U.S.. Finally, the French version was pilot-tested with four RH professionals in France. They all agreed on the appropriateness of the questions for the French corporate world, and on the clarity of the terms used and of the survey items.

The questionnaire included several Likert-type scale items. The first section of the survey gathered demographics on the respondents and the organizations. The other sections determined French company policies and practices in: training tools and methods, number of trainees, frequency of training, training subjects, and organization development challenges and changes. A section on ethical concerns for RH professionals was also developed.

Collection of Data. On February 14, 1995, questionnaires were sent to the top 100 French organizations. The mailing included a cover letter, a questionnaire, and a stamped envelope addressed to one of the researchers in France. Two follow-up mailings were sent. The second follow-up mailing included a postcard which asked participants to return the card if their RH activities were not developed enough to respond to the questionnaire. The total response rate was 65.9%. Of these, 63.3% had no significant RH activities. See Table 1, next page.

Analysis of Data. The data were compiled in a descriptive format. First, the data formed a description of the responding organization: number of employees in the organization, number of managers, years since creation of the organization, type of industry, geographical business coverage, and annual gross sales. Second, the data were compiled to address four questions: what are the characteristics of RH departments and professionals, what are the specifics of RH activities, and are there any similarities between the characteristics of RH/HRD in France and those of HRD in Korea, the United States, and the People's Republic of China?

Research Findings

Responses are presented in terms of number and percent of the total. The first part of this section provides a profile of the firms that responded to the questionnaire. This section summarizes the

Table 1
Response Rate

Status	n	%
Surveys sent	100	100
Not deliverable	9	9
Total delivered	91	91
Returned indicating insufficiently developed RH activities	30	32.9
Returned, unusable (no response, no post-card)	8	8.8
Returned, usable	22	24.2
Total returns	60	65.9

responses concerning all other items of the questionnaire and classifies the data received in four categories to answer the research questions presented earlier.

Characteristics of the firms. All of the firms that responded to the survey employed fewer than 10,000, but more than 100. A total of 36.3% employed fewer than 1,000, and 55.5% employed between 1,000 and 2,499. The majority of respondents (91%) indicated that there were fewer than 100 managers in their organization. A majority have between 50 and 99 managers. A definition of the term manager was provided to the participants in order to ensure common understanding. The term manager was defined as someone who conducts, directs, controls, supervises, and coordinates any industrial or business project, with responsibility for results. A total of 77.3% of the organizations were created more than 50 years ago, with 9.1% created more than 100 years ago. The most recently created organization was founded in 1978.

The respondents represented a wide range of business activities. The most widely represented industries were textile, medical, electronics, food processing, banking, construction, oil refining, and general trading. Only one respondent indicated his or her organization's total annual gross sales. This low response rate may be explained by France's cultural tradition not to discuss personal finances in specific terms (Barsoux, 1990). No response was given to questions related to multinational status.

Characteristics of RH Departments and Professionals. The majority of respondents (81.8%) were male, and all respondents had at least a three-year college degree, in business, education, or human resources. All respondents were managers, and the majority (77.3%) worked in Ressources Humaines departments, whereas 18.2% were members of top management with RH as their primary function. All respondents have taken part in the selection process for contracting external consultants and purchasing materials and programs. A total of 54.5% of the respondents have participated in the following training activities: conducting needs assessment for training, designing training, developing training materials, implementing training programs, and selecting audio-visual equipment for training. On the other hand, none of the respondents has taken part in evaluating RH personnel, conducting research in RH, developing career workshops, or developing a mentoring system for career development.

The majority of respondents (68.2%) indicated that fewer than five people were actively involved in RH in their organization. All respondents indicated that, since the creation of their department, no additional personnel had been hired for RH positions. The nature of the training received by RH personnel in the responding organizations was evaluated by two questions: What type of training in RH areas did they receive prior to hiring, and what type of training had they received since they were hired by the responding organization. The majority of respondents indicated that RH employees had received some kind of training in RH-related fields prior to hiring, with 36.4% having received a degree in Ressources Humaines and 18.2% having completed training in management and business. In the case of post-hiring training, two-thirds indicated that they had not received any training related to their profession.

Respondents were asked to indicate whether their organization used the services of external RH consultants/organizations. All responding organizations have contracted with external consultants, almost exclusively for projects that required expertise not present in the internal RH staff. The three most widely used means to select consultants were: a) used previously, b) used previously in other parts of the organization, and c) word-of-mouth. Cold calls, telephone books, consultant directories, and universities were not used for selecting consultants.

Finally, only two of the respondents chose to indicate annual salary range for RH personnel ($40,000 to $80,000). Once again, it should be noted that the low response rate for this item can de directly related to its focus on individual financial information, a topic usually not discussed publicly in France (Barsoux, 1990).

External and Internal Environments for Ressources Humaines. The purpose of the second section of the questionnaire was to determine the environment in which RH professionals perform their tasks. The questions covered the issues of budget and support for RH, status of RH in the organization, critical challenges for RH, and ethical issues for RH activities.

All respondents but one reported that there had been no change, either decrease or increase, between the budget allocated to RH activities in 1993 and that of 1994. No increase was forecast for the 1995 fiscal year in any of the responding organizations. When asked to compare the current status of RH to that of 1993, 86.5% of the respondents indicated that RH was considered more important in 1995 than in 1993. All other participants considered that the status of RH had not improved nor deteriorated over the past two years. When asked to indicate what group within the organization supported RH the most, the majority of the respondents (86.4%) selected management. Top management was believed to support RH by 22.7% of the respondents, and another 27.3% indicated that the unions supported RH activities in their organizations.

Responding organizations reported a wide range of challenges to be critical for RH activities. Overall, the top five challenges that were considered highly critical by the respondents, were: a) quality improvement, b) organizational restructuring (centralization), c) organizational restructuring (decentralization), d) acquisitions/mergers, and e) union relations. Only five of the responding organizations indicated that ethics, international competition, technological change, and productivity improvement were critical to RH activities. Finally, the challenges of staffing, growing immigration, government interventions, new mission of the organization, new market strategies, and re-engineering were not considered critical by any of the respondents.

Another organizational dimension that affects the environment in which RH professionals work is ethics. Only three of the respondents chose to answer the questionnaire item on ethical issues for RH. Ethical issues seem to be another topic not publicly addressed by the French (Barsoux, 1990). A total of 16 ethical issues were presented in a 5-point Likert-type scale to rate their importance from the perspective of RH professionals, with 1 indicating not important, and 5-very important. All respondents rated most of the issues with a score of 3 and above. All respondents rated "rejecting inappropriate requests/bribery" as being very important. In the same way, all indicated that "balancing organizational and individual needs," "avoiding instilling personal rather than work-related values onto others," "selecting appropriate interventions," and "addressing the possible negative consequences of an intervention based on the probable direct and indirect effects" were critical issues for RH.

Specifics of RH activities. Several specific activities were also identified.

RH Processes. Participants were asked to indicate the level at which several RH processes agreed with practices in place in their organization. A total of 81.8% of the

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respondents answered that formal and systematic assessment of needs for most RH projects was not part of their organization's practices. The majority of the respondents (77.3%) agreed that little or no evaluation of the efficacy of RH interventions was conducted. In addition, a total of 90.9% of the respondents indicated that they did not devote a lot of time to determining the content of RH projects. Only 40.9% of the responding organizations pilot-test interventions before implementing them. The majority of respondents agreed that little or no assessment of the trainees' level of knowledge and skill level was done prior to designing and implementing interventions. In the area of training, 36.4% of the respondents indicated that training tools and methods were selected according to learning objectives, and 31.8% answered that their training tools and methods were assessed during their development. Only 22.7% of the respondents indicated that employees' progress was assessed after the intervention is completed. In the same way, only 22.7% of the organizations conduct employee performance evaluation according to pre-established criteria.

Areas of Intervention. Respondents were asked to rate a total of 30 areas of intervention according to their importance for RH activities. The areas were listed in two 5-point scales. The first scale was devoted to current areas of intervention and their importance today. The second scale was used for future areas of intervention. The current areas of intervention which were ranked the highest (at 4.5 or higher) were team management, organizational communication, problem solving, leadership, interpersonal communication, and managing change. Eight areas of intervention were considered unimportant (all less than 1.5) by the respondents: structural change in labor force, stress management, sexual harassment, ethics, welfare, diversity, union cooperation, and equal opportunity. Overall, areas which respondents considered important for current interventions were also expected to be important in the near future (3-year span). In addition, a few areas were expected to gain importance over the next few years: team management, team building, involvement in work teams, and interpersonal communication. The issues of sexual harassment, diversity, union cooperation, and welfare are expected to be of little significance in the future of the responding organizations' RH.

Training Hours and Number of Trainees. Respondents were asked to indicate the number of employees who had received training in 1994. Respondents were to provide information on average hours of training per employee according to job groups: executive, "cadres" (seniors managers, middle-managers, first-line supervisors), sales people, clerical/administrative employee, production workers, and customer service employees. Then, respondents were asked to indicate the total number of hours of training received by employees in 1994, according to the same job groups. Table 2, next page, shows the compiled average number of trainees and compiled averages for number of hours of training. Executive personnel and "cadres" received the most training, with respective averages of 51.9 and 42.7 hours of training. Production workers were the largest group of people trained.

Types of Training and Origin of Training Programs and Tools. Respondents were asked to indicate whether the training programs used in their organizations were a) developed internally, b) custom designed by external vendors, or c) a combination of both. A total of 10 types of training are exclusively produced by internal RH professionals: executive development, management information, new employee orientation, trainer training, product knowledge, finance, health management, personal growth, labor relations, and clerical training. Finally, respondents indicated that four types of training were never offered in their organizations: diversity, sexual harassment, customer education, and abuses of office supplies. The 10 most widely used (all over 95%) types of training, regardless of their source, were: quality control, quality transformation, human relations, decision making, management development, management skills, motivation, safety management, and communication skills.

Training Materials and Program Media. Another item asked respondents to indicate which training materials and/or program media were used in their organization. Respondents were also asked to specify the source of the materials and media, either a) produced in their organization, b) custom-produced by outside sources, or c) purchased off-the-shelf. Audio-cassettes, computer software (disks), overhead projectors, and public seminars/workshops were used by the majority of organizations (68.2%). All of them were purchased off-the-shelf. Other

Table 2
Training Hours and Number of Trainees (n=17)

Level	Average hours of training per employee	Average number of people trained
Executive	51.9	45
Cadres [Senior managers Middle managers First-line supervisors]	42.7	114
Sales People	7.8	49
Clerical/Administrative employees	10.0	63
Production workers	6.5	227
Customer service employees	7.3	23

materials, such as films, videotapes, and self-assessment materials, were used by 40.9% of the responding organizations. Those were either custom-produced by outside vendors or purchased off-the-shelf. Slides, textbooks, and workbooks were used by 36.4% of the responding organizations, and custom-produced, either internally or externally. Finally, on-site seminars/workshops were used by 22.7% of the respondents and produced internally. A few materials and program media were not used by any of the responding organizations: computer software (CD-ROM), videodisks, interactive video, teleconferences, out-door programs, and games/simulations.

Training Methods. Respondents were asked to specify the methods used for training personnel in their organizations. A 5-point scale was used to rate the frequency at which each of 14 methods listed was used, with 1 indicating never and 5-very often. The most frequently used (all at 4.3 or greater) training methods were a) discussions, b) formal on-the-job training, c) informal on-the-job training, d) one-on-one coaching, and e) case studies. By contrast, self-assessment instruments, games/simulations, computer-based learning, lectures, role plays, and teleconferencing (both video and audio) were rarely used (1.4 or less).

Similarities between the Characteristics of RH/HRD in France and Those of HRD in Korea, the U.S., and the People's Republic of China. In order better to define the status of HRD in Korea, Ahn and McLean (1992) sent a total of 300 survey questionnaires to Korean companies. In the same way, Training Magazine (Industry Report, 1995) conducted a study of 13,000 U.S. organizations. Finally, Shi and McLean (1996) mailed a total of 177 questionnaires to U.S.-Chinese joint ventures in mainland China with the goal of defining the status of HRD in those organizations.

The largest group of people trained in France, Korea, and the U.S. are production workers. Management skills and development, communication skills, and safety management are major types of training in those three countries. While the majority of training programs are developed internally in French and U.S.-Chinese companies, most programs offered in Korea and the U.S. are developed jointly by internal and external services. One of the most widely used methods of training in all four countries is case studies. Korea and France share current HRD issues: Team building, problem-solving ability, leadership, and motivation. The studies in France, Korea, and the People's Republic of China show that motivation will be a major issue in the near future in the three countries. French and Korean organizations will also focus their HRD activities on team building, problem solving ability, and leadership.

Conclusion

Several conclusions were drawn. First, it appears that the majority of French RH professionals hold managerial positions and have a minimum of a three-year college degree. It also appears that French RH departments focus their activities on four main areas: training, quality management, selection of consultants, and purchase of programs and materials. Internal RH professionals work extensively with external consultants, especially in the area of training.

RH professionals conduct little, if any, assessment, either for interventions, materials, tools, trainees' knowledge and skill levels, or employee performance. The top current areas of intervention are team management and organizational communication; for the future, they are team management and involvement in work teams. The training delivered the most often are quality control and quality transformation. The most widely used RH methods are discussions and on-the-job training (formal and informal). Finally, limited technology is used in RH interventions. The most widely used materials and media are audio cassettes, computer disks, and overhead projectors.

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Getting It Together: Motivations and Success Characteristics for Interorganizational Collaborations

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In an interorganizational collaboration, autonomous groups take action toward mutual objectives according to shared rules and resources. Such work is often critical to the members, yet they often do not share, or even fully understand their motivations. To promote clarity in this area, this article presents the results of a literature review study, a hierarchical framework of motivations for interorganizational collaboration, and several examples of application of the model in large and small companies.

Collaboration among groups is not a new phenomenon. However, in our intensively competitive and specialized world, and aided by modern transportation and communications technology, interorganizational collaboration is becoming not only more common but also critical to the viability of many business, academic, community, and governmental organizations. Given the ubiquity and the growth of this organizational "life form," it is important to integrate and extend what is known about it, drawing from both scholarly theory and participant experience.

The purpose of this literature review study was to delineate the motivations that lead organizations to form collaborations and to identify the characteristics that typify successful collaborations. The specific questions pursued were: What reasons do researchers report that groups demonstrate when entering into collaborative arrangements? What trade-offs do they weigh? What safeguards do they require to insure their continued individual identity?

Methodology

The research questions were addressed through a literature review, comprising both theoretical and case study data spanning various disciplines. The study of interorganizational collaboration and the still small body of qualitative research in the field as well as books that center on emerging boundary-crossing forms of organization were included. The findings from the literature review led to the creation of the model -- Hierarchy of Motivations to Collaborate" (Figure 1).

Importance of the Model The model is of use to organizations, and particularly to their leadership, in several ways. The first has to do with the need for collaborating organizations to maximize both self-understanding and mutual understanding of their motivations. All members of the collaboration may not be on the same level of the motivational hierarchy, but they must understand "what is in it" for all concerned. Strategically, the success of the collaboration will be measured in terms of its joint objectives, as well as the objectives of the constituents. Motivations are a vital element of these objectives. Operationally, action planning and expectation setting will occur in the context of the reasons for the collaboration; the reasons will provide the focus. For example, if organizations collaborate to heighten their legitimacy (social and/or political status), their actions will be significantly different than if their motivation was secure access to resources.

A further justification for the model involves the intense real-time learning that typically accompanies the initiation, conduct, and evaluation of interorganizational collaboration. The great majority of writing and training, both formal and informal, about how to build, manage, and work in organizations is focused on organizations in the traditional (self-contained and

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stable) sense. Therefore, collaborating organizations need to unlearn and learn anew as they break new ground. Effective learning occurs in the context of purpose. Again, motivations and needs are a key part of the purpose that will give meaning to the learning experience.

Finally, the scholarship of interorganizational collaboration is young. The literature reviewed for this paper represents a good portion of what exists, and it did not include a comprehensive model of motivations, such as this paper presents. Discussions with both academic and business colleagues revealed a keen interest in these ideas. For scholars, the framework helps organize the rest of the literature. For business people, the framework helps clarify their decisions about whether, why, and how to collaborate with other organizations.

Theoretical Underpinnings The theoretical basis for the model presented in this paper is the same as that cited in Gray and Wood's literature review (1991a, 1991b). These perspectives and the authors associated with each are

Resource Dependence Theory	Logsdon
Corporate Social Performance Theory/Institutional Economics Theory	Pasquero
Strategic Management Theory/Social Ecology Theory	Westley and Vredenburg; Selskey
Microeconomics Theory	Fleisher
Institutional Theory/Negotiated Order Theory	Nathan and Mitroff; Sharfman, Gray, and Yan
Political Theory	Golich; Roberts and Bradley

Gray and Wood were concerned with the explanatory power of each of these perspectives, at both the organizational and domain levels, in treating three issues of collaboration: preconditions, process, and outcomes. Impressive as their review is, the authors do not deal with the issue of motivations for interorganizational collaboration, nor with the dimension of expanding horizons (in terms of time frame and social benefit) as presented in the model, Hierarchy of Motivations to Collaborate. The case for such a model became clear in the sampling of some of the literature which Gray and Wood reviewed, and it strengthened as other sources (as listed in the reference section of the original proposal) were added and the viewpoints of business leaders whose success largely depends on successful interorganizational collaboration were also considered.

Testing the Model The framework derived from the literature review was tested through analysis of four cases interorganizational collaboration. Key participants were interviewed regarding their motivations for forming the collaboration, their initial and revised expectations, and organizational critical success factors, as experienced or anticipated.

Results and Conclusions

The definition of collaboration has been honed in recent years to be made more comprehensive and precise. After surveying a number of writers, Gray (Gray and Wood, 1991b) proposed the following update to her own earlier landmark definition:

> Collaboration occurs when a group of autonomous stakeholders of a problem domain engage in an interactive process, using shared rules, norms, and structures, to act or decide on issues related to that domain. (p.146)

Gray's definition is intended to be encompassing and rigorous, and to apply equally well in discussions informed by the six major theoretical perspectives of collaboration researchers, which are

- resource dependence theory
- corporate social performance theory/institutional economics theory
- strategic management theory/social ecology theory
- microeconomics theory
- institutional theory/negotiated order theory
- political theory

Looking across both cases of and the literature on interorganizational collaboration, an interestingly "Maslovian" hierarchy was evident in the motivations driving organizations to join in collaboration with others. Figure 1 below shows the levels of motivation as a succession of increasingly higher needs. In this context, "higher" implies a concern for both longer range and more encompassing benefits. Additional levels may yet be identified.

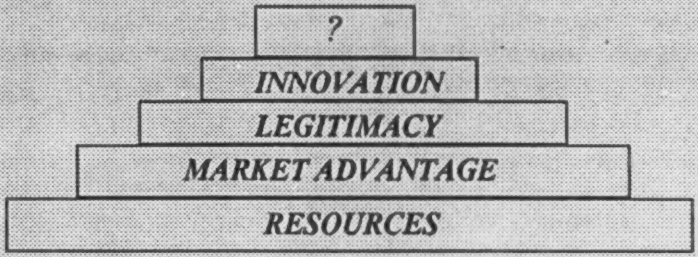

Figure 1. Hierarchy of Motivations to Collaborate

Resources At the most basic level are motives relating to the acquisition of or access to resources, including material inputs, distribution or logistical capabilities, financial resources, and manpower. This form of collaboration can be viewed as a more interdependent and open-ended version of conventional supplier relationships, i.e., relationships wherein the parties work together beyond the terms of specific purchase orders or contracts. Rather, as collaborators they are likely to share strategic information as well as strategic investment. Thereafter, they will approach future opportunities to grow and be more profitable together.

There are examples among both old and new companies. A case in point is General Motors, which "In 1971, ...made its 34 percent strategic investment, ...cemented relationships with Japan's Isuzu Motors, gained access to a needed component, and gained entry to a new market." (Lipnack and Stamps, 1993, p.125). Nike took a different tack, becoming a core

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distribution firm surrounded by product-producing collaborators. "It based its strategy on close relations with – but not dominance of – manufacturers in the resurgent East [Asia]" (Lipnack and Stamps, 1993, p.121).

Market Advantage Whereas reliable access to resources and customers helps a company thrive in the business it is already in, collaboration for market advantage allows the partners to enter new markets and perhaps even create new market segments. This level of collaboration can take the form of joint research and development, where the collaboration may involve many or all of the major players in an industry as well as governmental entities. The partners work together to build a more advanced platform of knowledge and capabilities. That platform is then the basis for a new stratum of competitive activity among the players.

As an example, Helgesen (1995) recounts how Nickelodeon, a small, informal team of innovative programmers, and MTV Networks, a giant TV production and distribution company, learned to work together, despite wide cultural differences, to create a new approach to non-cartoon, "kid-friendly" entertainment, moving beyond television to theme parks, magazines, and other product types.

Legitimacy A motivational level higher is the quest for legitimacy, or, put more simply, enhanced social and/or political status. Most organizations have multiple reasons for seeking collaborative arrangements, and the search for increased status or legitimacy, a valuable intangible asset, is often near or at the top of the list. Indeed, Oliver (1991) suggests that organizations may be willing to relinquish some measure of autonomy – specifically their power to make decisions regarding the use of information and commitment of resources -- in order to gain legitimacy, especially when there are reciprocal guarantees and equal benefits.

Two very interesting examples of this phenomenon were identified in the literature. Sharfman, Gray, and Yan (1991) reported the efforts of executives of the garment industry to deal with a critical effect of the poor reputation of the industry – extremely rapid employee turnover. A charismatic individual forged a training program which brought together company management, a regional industry council, and a well-regarded vocational school. Together, the collaborators were able to obtain a year's funding from state economic development sources.

The pilot phase was deemed successful on several counts. Most directly, the immediate pressure of rapid employee turnover abated. In addition, participating groups began to exchange information and consultation beyond the scope of the training program. The pilot also was a model to others in the community, and at least two similar groups were launched.

However, the original garment industry effort was stymied principally by a factor embedded in the wider system. To obtain longer term funding from federal sources, the project would have had to attract trainees from different and unfamiliar sectors, including current welfare recipients and the chronically unemployed, who typically are daunted by economic disincentives against giving up relative security for an unknown.

The second example involves collaboration by "strategic bridging" (Westley and Vredenburg, 1991) whereby an environmental advocacy group attempted to achieve several ends at once. By "branding" certain household items as environmentally friendly, the program intended to confer a mantle of goodness on the manufacturer of the products, while at the same time raising money for the advocacy group and providing the public with products that were less damaging to the earth.

Innovation The highest identified level of interorganizational collaboration could be called "innovation" or "future-building." In the last few decades, the organized world has been a veritable laboratory of organizational forms. Partnerships of varying purpose, extent, complexity, and formality are being tried on for size or, more accurately, for effectiveness. The books by Helgesen (1995) and Lipnack and Stamps (1993, 1994) are full of stories of community organizations, geographic regions, and emerging industries as well as individual companies and agencies, all of which are recognizing that *innovative organizational form* is their most strategic frontier.

Consciously or unconsciously, all organizations exist in an "Interorganizational Field," the theoretical underpinning of negotiated order theory (Nathan and Mitroff, 1991). The elements within the overall interorganizational (IO) field include: focal organization; organization set; industry; action set; and networks. When a group recognizes that it participates in the IO field, it can make best use of its choices, comparative strengths, and mutual expectations with other members of the field. The IO field can range in potential effectiveness from "fragmented" to "high quality," the latter being more readily able to deal with crisis. Nathan and Mitroff (1991) report a case which involved the response of an IO field (which included members of the food industry, the government, and the media) to a product-tampering crisis. The crisis required the members to explicitly recognize and value their membership in the IO field, and to understand better how improving their relationships could improve crisis management, both currently and in the future.

Characteristics Of Successful Collaboration

Across the literature reviewed, numerous characteristics of successful collaboration were identified. The following set are the most important, based on their virtual universality among the sources reviewed as well as on how strongly they impact the effectiveness of the collectivity under review.

Shared Purpose In a true collaboration, a sense of shared purpose goes well beyond mutual back-rubbing. A shared purpose exists when all parties can articulate their aspirations for the collaboration, which is greater than their individual purposes and which applies in total to all of them. Leadership and strategy for the collaboration emerge from shared purpose (Lipnack and Stamps, 1993, 1994; Helgesen, 1995; Gray and Wood, 1991a).

Member Representation The members of a successful collaboration are themselves intact, autonomous groups. Each member group must have sufficient internal cohesion (effectively, DNA coding) so that its participation in the collaboration truly reflects the values and objectives of the whole group. An individual from one member group can operate on his own only for a limited period of time (Westley and Vredenburg, 1991). Soon, it must be demonstrated that others in the member group are willing to be active in the collaboration as well. Otherwise, the collaboration will founder, and the member group may either disband or eject the wandering member (Sharfman et al, 1991).

Equity All parties must feel that they are equally invested in the relationship and will benefit equally. "Equally" could equate to "proportionally," when the parties are of significantly different size, wealth, segment, and/or risk level (Westley and Vredenberg, 1991). It is also critical that enforcement of the terms of the collaboration be seen to be equitable (Nathan and Mitroff, 1991).

Communication This is linked to the "autonomy" issue discussed above. Communication includes both the mechanisms and the willingness to share information about goals, problems, resource requirements, status, opportunities, and the like (Lipack and Stamps, 1993, 1994; Helgesen, 1995).

Flexibility A collaboration is a complex organizational arrangement, subject to many internal and external pressures. A member group may belong to several simultaneously. Furthermore, collaborators may also be competitors. The need to balance all this complexity requires all participants to be both flexible and realistic in their expectations of each other. Because they are going through a group development life cycle, they should expect to "grow into" their relationship, and they should periodically test their progress and correct their course (Lipnack and Stamps, 1993, 1994; Helgesen, 1995, Gray and Wood, 1991a, 1991b).

Member Integrity Each group comprising the collaboration must maintain its separate identity along with the willingness to face and resolve the conflicts that will inevitably arise. Lipnack and Stamps (1993) coined the term "groupthink" (p. 300) to characterize the dangers of allowing the momentum of the larger group to overwhelm smaller group requirements. Wheelan and Karsick (1993) allude to this phenomenon in their assertion that it is inevitable (bordering on mystical) that group components will come to mirror characteristics of the overall group to which they belong, even if it is only a temporary arrangement. This was an outcome of their study of the adoption of themes (topics and beliefs about these topics) that emerged in the breakout groups at an annual conference in which they found a significant similarity across the breakout groups that could not be explained entirely by intergroup discussion or leadership impact. Wheelan and Karsick concluded that the system takes on a personality of its own, and "When individuals choose to speak in a social system, they may not be speaking for themselves. Rather, the system may be speaking through them." (p. 256)

Testing the Model

The model of the hierarchy of motivations for interorganizational collaboration emerged from a literature review study, and it accounts for many of the experiences and differences reported by a variety of researchers. To further test its applicability and usefulness to organizations involved in or contemplating such engagements, a small number of interviews were conducted, following a brief description of the model and its source.

Media4 Media4 is a start-up company in Atlanta which develops technology for the distribution of multimedia information to personal computers over satellite and wireless networks. The three-year-old company is committed to remaining small and flexible. According to Jim Stratigos, company president, this is both a good business strategy and a personal preference of the founders, who came from large, bureaucratic corporations. Thus, interorganizational collaboration is key to their ability to access capabilities they do not possess internally.

Media4 has built a relationship with a strategic supplier (Supplier 1) to whom they outsource software development of a component (some or all of the network management function) of their product, which Media4 does not consider part of its core competency. They felt that what they gained in time, flexibility, and freedom from having to hire/train employees to do the work outweighed any risk in quality or confidentiality. In addition, risks are contained by several means, including

- Supplier 1 is local, and people from the two companies can meet or talk informally as much as necessary
- Supplier 1 is not a competitor
- The acquaintance was made via a mutual trusted friend
- They each refer their customers to the other, when appropriate, so that their fortunes tend to be intertwined

At this point, Media4's relationship with Supplier 1 is a felicitous vendor-supplier relationship, but not quite an interorganizational collaboration.

Some of the hardware included in Media4's total product is licensed from another company (Supplier 2). Within this segment of the hardware market, Supplier 2 has a virtual monopoly, by capturing "mindshare", i.e., by having entered the market first and established the standard. However, the component that Media4 acquires from Supplier 2 is not in Supplier 2's mainstream. Media4's anticipated success and the resulting growth in demand for their product is likely to noticeably change Supplier 2's earlier plans, leading to a development path influenced by their informal alliance. Therefore, this collaboration belongs on the first level of the interorganizational collaboration motivation pyramid – the *resources* level.

As he spoke of his company's future, the founder/president's language was remarkably in tune with the highest level of the pyramid -- *innovation/future building*. He is confident that his venture will be successful (as was an earlier venture, now a major line of business for a telecommunications giant), but he is "bound and determined to keep it small." To accomplish this, he envisions Media4 becoming the spawning ground for a confederation of small companies. Each will have less than 300 employees, and each will be focused on a defined market need and fully capable of delivering the solution. At the confederation level, they might share certain support and professional services and/or facilities for offices and research and development, but each company would be free to partner or not, as best served its own and its clients' interests.

Synchrologic, Inc. Another young company located with Media4 in the Georgia Center for Advanced Telecommunications Technology (GCATT) business incubator in Atlanta is Synchrologic, Inc., which offers software specifically optimized to reconcile sales-related databases across computer networks. The very existence of the company is due in part to a three-way interorganizational collaboration between the company's founders, the Georgia Research Alliance (GRA), and the College of Computing at the Georgia Institute of Technology (Georgia Tech). The critical value gained by this arrangement is *legitimacy* for Synchrologic, i.e., it was able to get funding for equipment and a location at GCATT because of its association with Georgia Tech and the GRA. In additional, there is mutual benefit, currently at the *resources* level between Synchrologic and the College of Computing. Synchrologic provides access to a well-furnished laboratory to Ph.D. candidates, which the latter tailor their research agendas to support Synchrologic's long-term product development plans. Both parties also recognize the high quality of their frequent informal interaction. As new business opportunities result, the collaboration may also come to reside on the *market advantage* level of the hierarchy of motivations.

Cross-functional Task Force as Interorganizational Collaboration At a multinational telecommunications corporation, five regional offices needed to implement a new computer-driven system. The benefits were obvious at corporate headquarters, but the lives of line people were to be complicated with no benefit apparent to them. To foster the necessary cooperation, a cross-functional, multi-level task force, led by a facilitator from headquarters, was formed to plan and implement conversion from the old to the new system. The team, consisting of clerks, supervisors, and managers, and representing operations, information systems, and other functions, dealt with the three generic issues of change: resistance, power and politics, and managing the transition. They determined the details of the formal change, the informal change, and stakeholder interests. Their plan included both transition tasks and a full program of information and communication to all individuals impacted by the change. In the end, the project was completed early, even though there was a strike at the site during that period. Their work inspired the whole office, and it facilitated the roll-out of the new system to other sites.

In fact, the product of this task force's work – as it must be with every successful task force -- was trust. Unlike a committee, wherein the members maintain their allegiance to the organizations they come from and are constrained to insure that those interests win as much as possible, a task force must create an identity of its own. In the context of a successful task force, discussions and outcomes are enhanced by the interplay of different points of view brought in by members from different organizations. Members are able to speak truthfully and non-judgmentally about their motivations and concerns. They focus on real needs and actions to be taken, not hiding behind politics and code language.

Because of their leadership and their processes, this interorganizational collaboration achieved *legitimacy* for its participants. If they had stayed intact and proceeded to further objectives, they might have moved on to the *innovation/future building* level.

Summary

The combined influence of political, economic, social, and technology forces which typifies our time – which has been labeled The Post-Industrial Age and The Information Age, and a host of less well-known epithets – has quickened and increased the formation of collaborative organizations in all aspects of society. Member groups display a variety of motivations for joining into collaborative arrangements, which range from the traditional need for reliable access to critical resources, to the desire for enhanced legitimacy and new markets, to the expression of truly innovative organizational vision.

It is useful to apply group development theory and understanding to collaborations. As collections whose components are not individual people but intact groups, they are subject to the same stage-specific developmental tasks and critical success factors that pertain to all organizations. Additional observation and theory-building is underway to understand the particular features of inter-organizational collaborations. Newer organizational forms, such as the Web of Inclusion (Helgesen, 1995) and the TeamNet (Lipnack and Stamps, 1994), are discussed in current literature, and these will undoubtedly be joined by others in the years ahead.

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Deterrents to Participation in Women Only Learning Events: A Case Study

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This case study was conducted to determine what factors might deter women in male dominated organizations from participating in single sex training programs. Previous research on single sex training and on deterrents to participation in educational activities served as background for this survey of those who declined to participate in a women in emergency services conference. The resulting quantitative and qualitative data are discussed with recommendations for further study.

The issue of whether special training programs should be created just for women has been debated for several years (see for instance, Lam, 1990; Lewis & Fagenson, 1995; Reavley, 1989). Proponents of single-sex training cite the supportive climate and networking opportunities as important reasons for this type of training (Lam, 1990). However, some believe single-sex learning events have outlived their usefulness. Segregating the sexes may result in women feeling more isolated in their organizations and invite suggestions that, unlike their male colleagues, they have deficits in key areas. A study conducted by Reavley & Naughton (1993) found that a female candidate with gender-specific training on her resume received less favorable ratings regarding the decision to interview and hire than either a male candidate or a female candidate without such training. Lewis & Fagenson (1995) provide this summary of the arguments for and against single-sex training:

> . . . women-only management training programmes have made significant contributions towards the objective of increased skills. However, the contributions these programmes have made to the objectives of reducing prejudice towards women and increasing the number of women advancing into and being promoted through the ranks of management have been less substantial. Thus, they may not be the ideal strategy to further the development of women in organizations (p. 42).

Still others suggest that the choice to engage in and sponsor single-sex training is situational and that factors such as participant experience level and training subject matter may need to be considered (Lam, 1990). Regardless of one's position regarding the viability of single-sex training, the reality is that such training still occurs. Commercial training suppliers (for example SkillPath®, Pryor Resources, and American Management Association) still offer female designated training on topics such as communication and image, stress management, and assertiveness.

Research Question

The purpose of this study is to describe a case where an attempt to provide a single-sex learning event failed due to lack of participant response, and a systematic effort was made to determine why members of the targeted group chose not to attend. While the literature provides information regarding the advantages and disadvantages of female-only training, it offers little insight regarding why women choose to attend or not to attend these types of programs. Are there organizational culture issues that influence their decisions? Are situational deterrents such as time and cost major factors influencing participation?

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Methodology -- Background Information on the Case

A conference for women employed in emergency services was planned for April 1996 in a mid-size Midwestern city. Potential participants for this conference included female police officers, firefighters, emergency medical technicians, correction officers, and dispatchers. The majority of emergency services fields remain male dominated, despite the integration of women into most other occupations in U.S. society (Floren, 1991; Jurik, 1985; Martin, 1990). The combination of high male to female ratios with occupations that traditionally have been characterized by physical and mental toughness yields organizational cultures that may require difficult adjustments for women. As a consequence, there is a perceived need for women in these fields to develop support networks with one another (Martin, 1990).

We became involved with this conference when one of the members of the planning committee asked us to present one of the concurrent sessions. The conference planners (a committee composed of local women in emergency service occupations) invested a significant amount of time and energy in the conference -- scheduling seminars for the three day event, negotiating meeting room arrangements, securing corporate sponsors for door prizes, and making travel and lodging arrangements for speakers. These efforts were in addition to their regular job responsibilities.

Registration forms and brochures which described the contents of the conference were mailed to women in emergency service positions in the Midwest. However, by the beginning of April, only 15-20 registrations for the event had been received, and a decision was made to cancel. To gain background for our proposed conference session, one of us had attended a planning session near the end of March, where a lengthy discussion had focused on why women were not registering. Some of the planning group speculated that perhaps individual departments were not paying registration fees or providing time off to attend, incentives often available for other job related conferences. Others suggested women were not signing up because they were afraid they would be harassed about their attendance by their male colleagues and supervisors. Still others were concerned that some departments perceived the conference as a "male bashing session." Finally, a few speculated that departments might not see the merit in this event since many of the sessions focused on issues from a woman's perspective. Overall, most of their speculation centered around the organizational culture and lack of support for this type of a program.

While they had ideas about the potential hindrances to registration, the planning committee remained uncertain about why they received such a low response to their mailing. It was important to determine what was behind the poor response because funds had already been approved for another conference for women within three years. Further, the members of the planning committee were aware of credibility issues, since they had lobbied hard for support for this event. By mutual interest, we decided to survey a sample from the initial mailing list to determine why they had chosen not to attend the conference.

Methodology -- The Survey

We developed a two-page survey, adapting some items from the Deterrents to Participation Scale (DPS) (Scanlan & Darkenwald, 1984) and the generic form of the DPS (DPS-G) (Darkenwald & Valentine, 1985). Various potential deterrents to participation have been identified in the literature, for example: cost, lack of quality, family and work constraints, lack of confidence, time constraints, and lack of relevance (Darkenwald & Valentine, 1985; Scanlan & Darkenwald, 1984). Several items on the survey reflected these major deterrents.

In addition, the literature examining factors influencing employee participation in developmental activities has found that employees' perception of the work environment tends to influence development activity (Noe & Wilk, 1993). For example, manager and peer support was found to correlate positively with participation in developmental activities. Since organizational culture issues appeared to be salient, several items were created that focused on these factors.

The program planners reviewed a draft of the survey and provided recommendations for change. They insisted if the survey was not brief, response rates would be low. The final draft was comprised of 22 Likert scale items and a section for comments. The five point response scale used for the 22 items spanned 1=not important to 5=very important. A cover letter sent with the survey explained the purpose of the study. A self-addressed return envelope was included. Surveys were returned to the researchers, rather than the program committee, to avoid concerns about anonymity of responses.

Surveys were mailed to the subset of the original list that reside in the state where the conference was to be held. This was considered to be both a reasonable sample size and the most likely group to be interested in any future events. Of a total of 304 surveys mailed, one hundred one (101) usable responses were received, yielding a return rate of 33%. Of the returns, 83 respondents completed the quantitative portion, 7 completed only those items they perceived pertained to them, and 11 completed the comments section only.

Results

Demographics: Only two demographic variables were included in the survey: field of employment and years of experience in emergency services. The majority of the individuals responding to the survey were employed in policing (52%). The remaining 48% included individuals employed in dispatch (11%), other (10%), corrections (9%), emergency medical service (5%), and fire fighting (3%). Twenty-three percent (23%) indicated they had 16-20 years experience in emergency services, 20% had 6-10 years experience, 18% had 11-15 years experience, 9% had 0-2 years experience, and 9% indicated they had over 20 years experience in the field (11% - missing cases).

Quantitative Results: The results of the survey suggest that no particular issue deterred women from attending this conference (see Table 1). The most salient issues for the respondents in this study were time (dates were inconvenient, department would not provide time off) and cost (respondent did not have the money to attend, department was not going to pay). These findings are consistent with other studies that have examined deterrents to participation in adult education activities (Blais, Duquette & Painchaud, 1989; Henry & Basile, 1994; Darkenwald & Valentine, 1985; Scanlan & Darkenwald, 1984). Also like other studies that have examined deterrents to participation, the individual item means are low, suggesting that only a few factors influenced each individual's decision to not participate in this conference (Scanlan & Darkenwald, 1984).

Intercorrelations were computed to determine if there was a relationship between how participants responded to the 22 items and their fields of employment or years of experience in emergency services. Only two items were found to correlate significantly with years of experience. An inverse correlation was found between years of experience and responses to item 6: "I though it might be a 'male bashing' conference" ($r=-.2285$, $p=.05$), meaning respondents with more experience were less likely to indicate this was a reason for not attending. Years of experience also significantly related to item 8: "The conference offered little to help me do my job ($r=.2274$, $p=.05$).

Qualitative Results: Each survey participant had the option to provide written comments in addition to the Likert scale items. Nearly 50 of the 90 respondents chose to do so. Many of the comments simply stated that other commitments prohibited the individuals from registering for the conference in question. Yet a few very pointedly expressed dissatisfaction with specific aspects of the proposed program. Although small in number, these few respondents articulated their concerns with such vigor (one even attached another sheet of typed comments) that they captured our attention. Some of those comments are included here to reveal what may be some key underlying issues. These comments focused on two main aspects of the conference: the minor, yet obvious point of including stereotypical activities as part of the agenda, and the major and apparently much more volatile issues surrounding acknowledgment of gender issues in the male dominant cultures of emergency services organizations.

Table 1: Potential Deterrents to Participation in Women in Emergency Services Conference

Variables	Mean	SD
1. Home responsibilities did not leave me enough time to attend the conference.	2.32	1.47
2. My department would not provide time off to go.	2.81	1.61
3. I did not think I would receive continuing education credit for attending.	1.39	.95
4. The program location was inconvenient.	1.40	.77
5. I perceived little value in the programs offered.	1.94	1.25
6. I thought it might be a "male bashing" conference.	1.48	.97
7. My colleagues would not approve of the conference.	1.21	.75
8. The conference offered little to help me do my job.	2.06	1.44
9. My boss did not support my attendance.	1.76	1.29
10. I forgot about it.	1.72	1.36
11. I would prefer not to go to a conference focused on women.	1.30	.80
12. I did not receive any information about the conference.	1.81	1.55
13. I was not willing to give up my free time for this activity.	2.01	1.40
14. There would be no tangible reward (i.e., career advancement) for attending.	1.75	1.24
15. I've met my requirements for continuing education this year.	1.13	.54
16. I did not have the money to attend the conference.	2.69	1.60
17. The conference did not focus enough on my speciality.	1.92	1.24
18. The department was not going to pay for this conference.	2.98	1.69
19. My attendance at this conference would be held against me.	1.38	.98
20. By attending this conference I would be separating myself from the rest of the department.	1.26	.72
21. I don't agree with emphasizing differences between men and women employees.	1.70	1.13
22. The dates of the conference were inconvenient.	2.61	1.65

1=Not Important, 5=Very Important

The stereotypical activities were a fashion show and a shopping trip scheduled during the three day conference. Admittedly, we were amazed at the inclusion of a fashion show in what was marketed as a serious content, professional event. Apparently, some of the potential participants were surprised by this choice as well. Comments included: "... I was personally very disturbed about the planned "fashion show." It was too "Miss America" for me- and bathing suits (?) P-leez! " Another wrote: "I must say that the evening activities-the fashion show and shopping trip- were a bit of a turn-off. They seemed kind of stereotypical..." Yet a third noted:

> I was really taken back when the brochure indicated this conference invited men to attend, but the social activities highlighted shopping at (a local mall). Wait a "I want to be part of the main stream minute". Many of the women would have been greatly offended had this conference been organized by men and the situation reversed.

One respondent suggested an alternative type of fashion show featuring uniforms and work related equipment that were made to fit women better than the cut down versions of men's attire often available.

The issue that brought the sharpest comments surrounded the pros and cons of the single sex focus of this conference. The comments reveal both sides of the core issue of acceptance into the mainstream culture. Those opposed to separating women and men expressed the following:

> I have been a police officer for a total of five years with two departments. I have never been treated differently by the people who know me and have worked with me. I refuse to separate myself from the men that I work with every day. These people have become some of my best friends and good sounding-boards. I believe we are all in this

> job together, and we should all stick together. I have had the opportunity to get involved in many different areas of this department, because I am one of the few women who enjoy getting involved and promoting this career.
>
> Throughout my law enforcement career, I have focused on being part of the "whole" picture. It would defeat my purpose if I now started restricting myself to a narrower point of view....I have all the rights and privileges of the other captains in my department and believe strongly it is because I have tried to accentuate the positive similarities, not amplify the differences. Events that are considered gender specific have no place in this environment. Addressing the needs of both genders in the same environment would be much more appropriate.

Other perspectives suggested different rationales for lack of response to a program focused on women:

> I am the only female officer at our post, which consists of about 60 sworn officers. I try extremely hard to "down play" my minority status and never try to use it to my advantage... . I feel if I ever screamed "discrimination" or "harassment" that I would lose the respect of my fellow officers. I even look down upon other women who use their gender as a tool for advancement, or to be in the limelight. I would have enjoyed the conference, but it was at a bad time for me to go. I would have gone on my own time, without my co-worker's knowledge, for fear of retribution or harassment. I feel my co-workers respect me now, but if I were to take part in a conference aimed at women, that they may feel I was trying to start trouble.
>
> I do believe that many female officers do not want to identify themselves with other female officers and would rather bond with male officers. I have seen this in my own department. I believe there is a subconscious class-consciousness or inferiority complex where many females feel that they are unique and can handle the job but other females can't. We are our own worst enemy. Many younger officers have no perception of what some of us went through to get hired, promoted or even to retain our jobs. In a recent Sergeants' Exam, I had the second highest score but wimped out and withdrew from the process because I did not want to go through what I went through when I first got on the department and have to "prove" myself. I'm too old, tired, and have lost the initiative.

The fashion show and shopping trip criticisms merely point out an unfortunate choice. However, the comments regarding single sex training, acknowledgment of gender differences, and acceptance into the established culture of an emergency services organization, although small in number, may represent an underlying controversy that arises in other institutions that encounter a diverse workforce. Should the prevailing culture of an organization reflect only those who make up the majority of the members? Does success for those who represent the minority require total assimilation to dominant group norms? If so, what are the costs? While some respondents to this survey clearly felt accepted and comfortable in their work environments, and saw no need for networks with other women; others just as certainly perceived they could be successful only if they followed a carefully prescribed set of rules. The former clearly saw this single sex training event as divisive; the latter may have found such a conference helpful as a support mechanism.

Discussion

Overall, time and cost were the two major deterrents to women's participation in this single sex learning activity. Despite very specific comments from a few respondents, the quantitative results did not indicate that the "women only" nature of the conference was a major reason for choosing not to attend. For example, the mean for item #11, "I would prefer not to go to a conference focused on women," was low, indicating this was not an important participation deterrent. Departmental support in terms of time off to attend and financial assistance was considered a much more salient issue. The lack of this type of support may suggest that those individuals making decisions regarding training and development resource

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allocation discount single sex training efforts, perceiving them as unnecessary and viewing participation in such events as disruptive to the organization. However, an equally plausible explanation is that financial assistance and time off for any type of training and development are provided infrequently in these types of organizations. Research exploring decision makers/managers' perceptions of the usefulness of single sex learning would be helpful to program planners of these types of learning activities.

Equally useful to program planners would be a systematic investigation of why women choose to attend single sex training activities and why some organizations support and encourage such attendance. For example, does the choice vary by years of experience? Are women in certain types of organizations more likely to participate in single sex learning activities? Are women in certain professions more or less likely to participate?

While this study did not clearly demonstrate the impact of culture on single sex training participation, some of the qualitative data indicate cultural factors that may influence receptivity to such opportunities. Additionally, the comments suggest divergent perspectives on separate training which makes resolution more difficult. Further studies in gender skewed cultures may provide greater insight into the utility of single sex programs and the settings in which they might be most appropriate.

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Learning Climate and the Structure of Work

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Based upon the assumption that team-based work has a favorable learning climate, organizations tend to substitute task-structured work for team-based work. In order to test this assumption a learning climate comparison is made between 28 employees of a department with task-structured work and 17 employees of a department with team-based work. The results indicate that the team-based department has a more favorable learning climate than the task-structured department.

The concept of learning climate has originally been evolved in educational science to describe the learning environment of students in a classroom or in any other school environment (Michaud, Forgette-Giroux, & Richard, 1989; van der Sijde, Dijkstra, & Bennink, 1989). Recently, the application of the concept of learning climate to the context of labor organizations has gained increasing attention in educational research. In this context a learning climate is generally described as the workplace characteristics that are associated with employees' learning (e.g., van Biesen, 1989; Knowles, 1973; van der Krogt, 1995; Marsick & Watkins, 1990; Pedler, Burgoyne, & Boydell, 1985).

Various educational researchers assume a relationship between the structure of work and the learning climate. Van Biesen (1989) notices that problem oriented work offers more learning possibilities, both in work and in social contacts, than repetitive tasks. According to Knowles (1973) there is less motivation for self-improvement and more obstacles to learning in hierarchically structured organizations than in functionally structured organizations, the latter being characterized by inter-linked groups or project task forces. Van der Krogt (1995) also assumes a relationship between the structure of work and the learning climate. In his opinion, task-structured work is related to a learning climate in which rules and procedures are dominant, whereas in team-based work the learning climate is focused more on sharing experiences with group members.

The purpose of the present study is to explore the relationship between learning climate and the structure of work. For this purpose, the Learning Climate Questionnaire (Bartram, Foster, Lindley, Brown, & Nixon, 1993) was administered to employees of a department with task-structured work and a department with team-based work in a Dutch truck factory. It was hypothesized that the team-based department would have a more favorable learning climate than the task-structured department.

Method

Participants. Employees of two departments with different types of work of a Dutch truck factory were compared. One department was characterized as employees being involved in task-structured work (TSD), whereas the other department was characterized as employees being involved in team-based work (TBD). Forty-five employees, 28 from one TSD and 17 from one TBD, participated. Sixty-nine percent were between 20 and 40 years of age. All employees were males and employed fulltime. Fifty-three percent of the employees had been employed in the truck factory for more than 10 years. The level of education of the respondents ranged from two to six years above elementary school.

Setting. The Dutch truck factory initially consisted only of task-structured departments. In 1987 the factory investigated the effect of team-based work on employees' productivity and satisfaction. For this purpose, employees with a slightly higher level of education were recruited from outside the factory.

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Task-structured department. In the TSD steel parts belonging to the cabin of a truck were pressed on machines which strongly varied in size and function. Although the tasks on the machines were mostly routine, the difficulty of these tasks differed between employees. However, most employees mastered each others' tasks and were able to substitute each other if necessary. Two employees of the department did not work on a specific machine but were in charge of quality control. They took samples and measured the steel parts to determine whether they were pressed according to given standards. Generally, the responsibility of the employees was limited to their own machine as only the manager coordinated the production process between the various machines.

Team-based department. The TBD produced large steel parts belonging to the undercarriage of the trucks. Depending upon the specific order, these steel parts were produced in different ways. Although the production could have been executed by task-structured work, the manager has given the employees the responsibility for the production process. When an order was received, the employees themselves assigned the different tasks and, thus, they organized the work themselves. Their autonomy was also extended to planning their own vacations. The major task of the manager was to solve technical and interpersonal problems. He refrained from coordinating the production process.

The Learning Climate Questionnaire. The Learning Climate Questionnaire has been developed in the United Kingdom through the collaboration of Newland Park Associates and the Employment Service (Bartram et al., 1993). It consists of 70 statements to which the respondent indicates his level of agreement on a 5-point scale. In order to prevent acquiescence, some items are formulated in a positive and some in a negative way. The Learning Climate Questionnaire comprises the following seven factors:

Management style. Measures the degree to which respondents consider their manager as being supportive and stimulating. This scale includes the following statements: "My immediate manager makes me feel like a valuable member of the team", and "If something is troubling me, my immediate manager tries to help".

Time. Measures the time pressure employees experience in their work. Examples of statements in this scale are "In some parts of the job there is not enough time to keep up with changes" and "There is no time to practise the things I need to know how to do".

Autonomy. Measures the degree to which employees are able to perform their work autonomously. Employees are asked to assess to which degree they have the opportunity to do their work in the way they prefer.

Team style. Measures the degree to which employees consider their colleagues as supportive and encouraging. Statements in this scale are "If we ask each other for help it is given", and "We accept each other's weaknesses and limitations".

Opportunities to develop. Measures the degree to which employees feel they have opportunities to contribute to the policy of their department and the opportunities employees experience to perform tasks that are unrelated to their work. This scale includes the following statements: "We have a say in how things are done here" and "If there are policy changes we have the opportunity to discuss how they will affect us".

Guidelines. Measures the availability of written guidelines in the workplace. It includes the following statements: "There is written guidance on how to do my job available for me to refer to", "There are clear guidelines on how my job should be done", and "I know where to find the information I need in my job".

Satisfaction. Measures the atmosphere of the department. Examples of statements in this scale are: "Some people here are always complaining about things" and "People tend to put each other down".

In a study by Bartram et al. (1993) Cronbach's alpha varied from .82 (for guidelines) to .92 (for management style).

Procedure To apply the Learning Climate Questionnaire in a Dutch truck factory, it was translated into Dutch. Due to the illiteracy of some employees, the Learning Climate

Questionnaire was filled out in an interview format. The interviews were all conducted by the same researcher. Whenever a respondent failed to understand a specific question, she explained the question in her own words. If a respondent, nevertheless, could still not answer the question, the answer was reported as missing. Interviews were held in a time interval of three weeks. Each interview took about an hour.

Results

Reliability A first step in the analysis was the assessment of the reliability of the questionnaire. Cronbach's alpha coefficients computed on the sample (n=45) ranged from .61 (for guidelines) to .79 (for team style).

Descriptive Statistics Means and standard deviations were computed for all seven dimensions (see Table 1). Employees of both departments had high scores on the dimension team style (with means of M=4.1 and M=4.5, for the TSD and TBD respectively), and low scores on the dimension satisfaction (with means of M=2.5 and M=3.1 for the TSD and TBD respectively). Standard deviations varied between .36 (management style, TBD) and 1.3 (autonomy, TSD).

Differences between departments A t-test for independent groups was carried out to determine whether the TBD had a more favorable learning climate than the TSD by comparing the scores for both groups on the dimensions of the Learning Climate Questionnaire. Results are shown in Table 1. Because of multiple comparisons between the two departments, the Bonferroni procedure was applied (Kirk, 1995). This means that the level of significance used was set at .007 (.05/7). One-tailed testing showed statistically significant differences between the two groups on the dimensions management style, time, autonomy, opportunities to develop, and guidelines ($p<.007$). On these dimensions the TBD had higher scores than the TSD. On the dimensions team style and satisfaction no statistically significant differences were found. Effect sizes were computed for each learning climate dimension. These varied from 0.59 (team style) to 1.47 (time). According to Cohen's criteria (1969) the effect sizes of four of the seven learning climate dimensions are large (>0.80).

Table 1. Differences on learning climate between a task-structured department and a team- based department

	Task-Structured Department			Team-based Department					
Learning Climate	M	SD	n	M	SD	n	$t^{a)}$	df	ES
Management Style	3.9	.74	28	4.6	.36	17	4.42^{*}	$41.7^{b)}$	0.95
Time	2.7	.75	28	3.8	.71	17	4.64^{*}	43	1.47
Autonomy	2.7	1.3	28	3.9	.84	17	3.40^{*}	43	0.92
Team Style	4.1	.68	28	4.5	.57	17	1.84	43	0.59
Opportunities to develop	3.5	.95	28	4.1	.59	17	2.58^{*}	43	0.63
Guidelines	3.5	.82	28	4.4	.46	17	4.78^{*}	$42.7^{b)}$	1.10
Satisfaction	2.5	.87	28	3.1	.97	17	2.03	43	0.69

[a] T-values are determined by one-tailed testing. [b] Due to a significant difference between variances, the separate variance estimate has been used in the testing. This has consequences for the number of degrees of freedom.

[*] Significant t-values at .05 level, using the Bonferroni criterium.

Discussion

The results of the present study suggest that employees who work in a team-based department experience a more favorable learning climate as compared with employees who work in a task-structured department. These results are largely consistent with the literature on work characteristics and learning climate (van Biesen, 1989; Knowles, 1973; van der Krogt, 1995). However, on the dimensions team style and satisfaction no differences were found between the two departments, which is at variance with the above literature. For the dimension of team style, both departments scored considerably high (with means of $\underline{M}$=4.5 and $\underline{M}$=4.1 for the TSD and the TBD, respectively). Especially for the TSD this is a remarkable finding, because employees who perform separate tasks are not usually expected to have strong feelings of cooperation. However, this finding may be explained by the fact that employees in the TSD work in groups around one particular machine. Because it is important that the different actions on this machine are coordinated, they probably do experience strong feelings of cooperation. For the dimension of satisfaction, employees in both departments turned out to have low scores (with means of $\underline{M}$=2.5 and $\underline{M}$=3.1 for the TSD and the TBD, respectively). These results may be due to the fact that the interviews were held at a time that continuation of their employment was threatened. Because of the resulting turbulence in the organization, this dimension may not have been assessed reliably.

Some methodological shortcomings should be mentioned. First, the generalizability of the results is limited because of the modest number of participants involved. Besides, the results are difficult to generalize to other professional domains because the educational level of employees of the truck industry is generally low (i.e., two to six years above elementary school). Secondly, it is not possible to draw conclusions about a causal relationship between the structure of work and learning climate because the employees were not randomly assigned to experimental groups.

One particular threat in assessing a causal relationship between work characteristics and learning climate is the possibly confounding role of educational level. As stated, employees working in the team-based department had a higher mean level of education as compared with employees in the task-structured department. The difference in learning climate between both departments may, thus, be explained by educational level as well. This possibly confounding role of educational level was checked in a two-by-two ANOVA in which respondents were categorized into two groups according to educational level. The results showed no statistically significant effect of educational level on learning climate (for all seven scales $\underline{p}<.30$). Moreover, there was no statistically significant interaction effect between educational level and department on learning climate (for all seven scales $\underline{p}<.30$). It may be concluded that the difference found in learning climate between the task-structured and the team-based department cannot be explained by educational level.

The results of this study suggest the existence of a relationship between the structure of work and learning climate. They also support the recent tendency in organizations to replace task-structured work by team-based work. This study also provides insight into the strengths and weaknesses of the Learning Climate Questionnaire. This questionnaire may be considered as useful to assess the relationship between learning climate and other work factors. However, further research should be conducted into the psychometric characteristics of the Learning Climate Questionnaire.

The present study may have contributed to our knowledge about the relationship between learning climate and the structure of work. Managers and organizational educators can apply this knowledge in order to create a climate conducive to learning at the workplace. More studies are needed to examine the learning climate in a larger variety of workplaces and to explore the effects of interventions in the workplace on employees' learning.

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Factors Affecting Motivation to Use Computer-Based Training

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This study examines the relationship of five groups of variables (individual or general attitudes, situational specific attitudes, reactions, learning, and environmental factors) with motivation to transfer skills and knowledge learned in a computer-based training program. Hierarchical regression analysis produced a model which explained 60.5% of the variance in motivation. Individual attitudes and environmental variables explained most of the variance in motivation. A number of mediated relationships were suggested.

Billions of dollars are spent each year on training (Broad & Newstrom, 1992; Sadowski, 1995) in an effort to increase productivity so businesses can stay competitive in the face of fierce global competition and a rapidly changing environment (Campbell, 1988) . Training is focused on trying to change behavior or teach new behaviors to individual trainees (Goldstein & Gilliam, 1990). However, little is still known about factors that impact the trainee's decision to use the training. From a cognitive perspective of motivation, individuals make behavioral choices based on a combination of factors (Vroom, 1964). Therefore, understanding the factors that influence individuals' choices, in particular their choice to use or not use training, would be valuable in determining how to motivate trainees to make behavioral choices that benefit the organization.

This study focuses on how individual and general attitudes, training situation specific attitudes, reaction, learning and environmental factors affect trainees' motivation to use computer-based training in an industrial setting. Computer-based training in an industrial setting has had relatively little attention in the training and development literature. Due to its cost effectiveness and its ability to meet the time demands of shift workers, computer-based training has become a popular delivery mechanism in a number of industries facing increased training requirements resulting from federal mandates.

The outcomes of this kind of research has important theoretical and practical implications. From a theoretical standpoint, a test of key components, mainly outside the training design, in a more comprehensive conceptual framework of training effectiveness gives guidance to future research and theory testing efforts. From a practical standpoint, a better understanding of why training is effective for some individuals and less effective for others can help focus and improve interventions, be useful in guiding needs assessments, designing as well as improving existing training programs, and designing more thorough evaluations. More effective interventions should lead to greater learning and transfer behavior which in turn should lead to improved performance and increased profits.

The primary purpose of this study was to empirically and systematically examine a computer-based training program in a field setting to determine the influence of selected variables that are believed to affect trainees' motivation to transfer training. Eleven specific hypotheses were examined which addressed two general research questions (shortened here for space reasons):

Research Question 1: What are the correlations between each of the independent variables and the dependent variable, motivation to transfer?

Research Question 2: What proportion of the variance in motivation is explained by five sets of these independent variables?

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Background

Noe and Schmit (1986) expanded the Wexley and Latham (1981) trainability equation to include an environmental component [Trainability = *f*(Ability, Motivation, Environmental Favorability)]. This formula suggests that for training to be the most effective a trainee should have the ability and motivation to learn and use the knowledge and skills taught in training, and that the environment to which they return must be supportive of the use of the training. Although Noe and Schmit's (1986) formula seems logical, a dynamic model a feedback loop should also enter into the equation. Trainees who have previous experience with training programs within the organization may develop perceptions of the environmental influences before new training programs are instituted. These perceptions of environmental factors may influence motivation to learn and motivation to transfer (Baldwin & Ford, 1988; Cohen, 1990; Noe, 1986).

In situations where participants are current employees and not newly hired recruits it can be reasoned that the information to be learned in the training program is within the ability level of the trainees. Therefore, in situations where ability is not a great concern, the question becomes how to motivate trainees to learn and use what they have learned back on the job and what the role of perceived organizational favorability play in influencing motivation to transfer. Holton (1996) developed a research and measurement model for HRD evaluation that shows several factors influencing motivation to transfer, and motivation to transfer in turn influencing individual performance. According to Noe (1986), trainees' attitudes, interests, values, and expectations can affect training effectiveness. Noe hypothesized that motivation to transfer moderates the relationship between learning and behavior change and is influenced by perceptions of work group support and task constraints.

Definitions

Motivation to Transfer Motivation was defined by Kanfer and Ackerman (1989) as "the direction of attentional effort, the proportional of total attentional effort directed to the task (intensity), and the extent to which attentional effort toward the task is maintained over time (persistence)" (p.661). Positive transfer of training is the application of the knowledge, skills, and attitudes gained in a training context to the trainee's job (Wexley & Latham, 1981). Therefore, motivation to transfer is the directional, intensity and persistency of effort toward utilizing the skills and knowledge learned in a training atmosphere to the real world work situation. When motivation to transfer is low trainees are less likely to use the skills and knowledge learned in training in their work setting.

Individual Attitudes Individual attitudes are attitudes that the trainee brings to the training program with him/her. They are attitudes that are not directly related to the training program but that can influence both motivation to learn and motivation to transfer. The individual attitudes included in this study were love of learning, internal work motivation, and organizational commitment.

Situational Variables Situational variables influence motivation to learn under a set of specific circumstances. Computer confidence was included as a situational variable because computer-based training was the delivery method in this study. Training attitudes was also included because favorable or unfavorable attitudes may have developed from past experience in similar training, management attitudes about the training, or peer group influences.

Reactions to Training Kirkpatrick (1994) called trainee reaction to training a measure of customer satisfaction. Once the trainee has experienced the training, his/her attitudes may be altered. Two measures are included in reaction, reaction to the learning environment and reaction to content validity.

Learning For the trainee to be motivated to transfer learning, learning must have occurred. The purpose of the "learning experience" is for the trainee to gain skills and knowledge and/or their to be a change in attitudes and beliefs (Mager, 1984). Learning average on computer-based tests was used as an independent variable in this study.

Environmental Factors Environmental factors refer to the organizational climate and constraints or aids that a trainee must deal with when they return to the job after completing a training program. Environmental factors in this study included supervisor support, supervisor sanctions, peer support and opportunity to use the training.

Methodology

This study was part of a larger project undertaken to evaluate a CBT training program.

Subjects Eighty-eight trainees participating in a CBT program from two units of a large petrochemical company in Louisiana completed the motivation to transfer measure. However, due to missing data the usable sample size was 74.

Data Collection Two instruments (Reaction and Transfer Climate) were developed for the larger study. Four other instruments used were previously developed instruments: Computer Attitudes (Loyd & Gressard, 1984); Self-Directed Learning Readiness Scale (Guglielmino,1977/78); Job Attitudes, which was a combination of 5 scales (Hackman & Lawler, 1971; Hackman & Oldham, 1975; Mowday, Steers, & Porter, 1979), and the START instrument (Weinstein, Palmer, Hanson, Dierking, McCann, Soper, & Nath, 1994). All these instruments had a 5-point answer scale, (1) Strongly disagree to (5) Strongly agree. The instruments were hand delivered in two separate administrations and collected immediately after completion.

Measures The instruments were factor analyzed producing subscales for each instrument. Only those subscales applicable to this study were used in the analysis. Learning was measured by averaging tests scores recorded by the computer on test at the end of each lesson.

Data Analysis Bivariate correlation analysis was used to address research question #1. Knowledge of the bivariate relationships between each of the independent variables and the dependent variable aided in the interpretation of the hierarchical regression results and gave a broader picture of the factors that contributed to motivation to transfer.

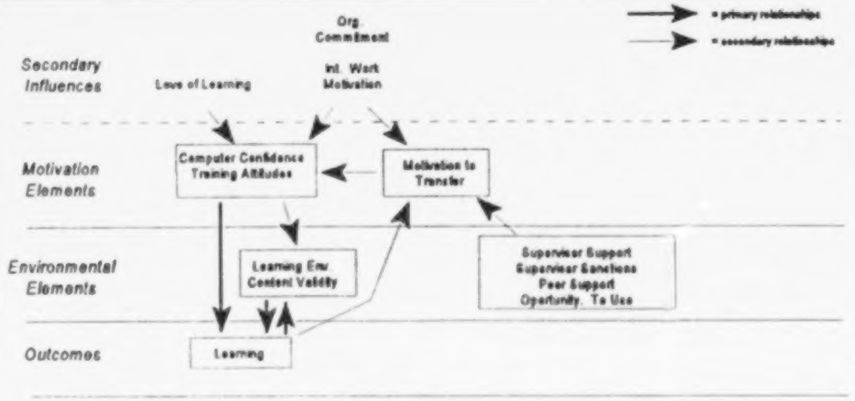
Hierarchical multiple regression was used to partition the variance in motivation to transfer that was accounted for by each successive set of variables over and above the influence of the preceding set(s). Thus, the unique portion of the total variance accounted for by each set of variables was estimated by examining the R^2 series and the change in variance explained from one set to another (Cohen & Cohen, 1983). When used as an exploratory method of examining relationships between variables, hierarchical regression can suggest the presence of mediated relationships between independent variables and the dependent variable. If the addition of specified causally "later" variables to the regression model results in coefficients for the causally "early" variables becoming non-significant, a mediated relationship between the "early", "later", and outcome variables is suggested (James & Brett, 1984). The order of entry was based on the conceptual model from Holton's (1996) HRD Evaluation Research and Measurement Model and the logical sequence of these variables or sets of variables as they appear in the training situation. The order of entry (see Figure 1) was as follows: (1) love of learning, internal work motivation, and organizational commitment; (2) computer confidence and attitudes toward training; (3) reaction to learning environment and reaction to content validity; (4) learning; and (5) supervisor support, supervisor sanctions, peer support, and opportunity to use.

Results

Research Question 1: Bivariate correlation analysis revealed that the largest correlations were found for opportunity to perform (r=.58), peer support (r=.54), organizational commitment (r=.41), supervisor sanctions (-.396), and computer confidence (.391). Only two variables, internal work motivation and learning, were not correlated with motivation to transfer.

Research Question 2: Hierarchical regression analysis results (see Table 1) indicated:

1) In step 1 of the regression analysis the individual/general attitudes (love of learning, organizational commitment, and internal work motivation) were entered as a group. The model was



Org. Commitment
= primary relationships
= secondary relationships
Secondary Influences
Love of Learning
Int. Work Motivation
Motivation Elements
Computer Confidence Training Attitudes
Motivation to Transfer
Environmental Elements
Learning Env. Content Validity
Supervisor Support Supervisor Sanctions Peer Support Opertunity. To Use
Outcomes
Learning

Figure 1: Conceptual Model for Motivation to Transfer (adapted from Holton, 1996)

significant ($p< .001$) with an R^2 of .198, indicating that almost 20% of the variance in motivationto transfer was explained by these attitudes. Only organizational commitment was a significant predictor ($p< .01$).

2) Step 2 of the regression analysis added the training specific attitudes (computer confidence and training attitudes) to the model. The model was significant ($p<.01$) and the R^2 increased slightly to .262. However, the increase was not significant. In Model 2 neither training attitudes nor computer confidence were significant predictors of motivation to transfer. Organizational commitment remained a significant predictor.

3) Step 3 of the regression analysis added the reaction variables to the model. The model was significant ($p< .001$) with an R^2 of .317, which was a slight but non-significant increase over the previous model. Reaction to the learning environment was a significant predictor ($p<.05$) . Organizational commitment remained a significant predictor ($p<.05$) and training attitudes approached significance ($p=.05$).

4) Step 4 of the regression analysis added learning average to the model. The model remained significant ($p< .001$), with a slight but non-significant increase in R^2 ($R^2=.341$). Learning was not a significant predictor of motivation to transfer. Reaction to the learning environment and reaction to content validity each were significant predictors of motivation to transfer ($p<.05$).

5) Step 5 of the regression analysis added the environmental variables (opportunity to use, peer support, supervisor sanctions, supervisor support) . The final model was significant ($p<.001$). With the addition of the environmental variables R^2 increased to .605, which was a significant increase ($p< .001$) over the previous model. The significant predictor variables in the final model were computer confidence , opportunity to use, peer support ($p<.01$ each) and supervisor sanctions ($p< .05$). Supervisor support was not a significant predictor of motivation to transfer.

Discussion

Although the importance of motivation in work organizations has long been recognized and studied (Lawler, 1994; Steers & Porter, 1991) little research has been done to provide a better understanding of trainees' motivation to transfer what they gained in training to their work setting. Noe (1986) proposed that a better understanding of how to increase the likelihood that behavior changes and performance improvement result from training participation would be gained by determining the specific individual characteristics that influence training effectiveness. Based on this proposition and prior research and theory, Noe proposed a model of motivational influences on training effectiveness. Extending some elements of Noe's model, Holton (1996) developed the HRD Evaluation Research and Measurement Model. Holton's model provides a conceptualization of the

Table 1 - Results of Hierarchical Regression Analysis for Motivation to Transfer

Variable	β	R^2	Adj. R^2	F/df	ΔR^2	F/df
Model 1		.198	.164	5.771*** (3,70)		
Org. Commitment	.412**					
Love of Learning	.196					
Internal Work Mot.	-.194					
Model 2		.262	.208	4.832*** (5,68)	.064	2.943 (2, 68)
Org. Commitment	.366**					
Love of Learning	.007					
Internal Work Mot.	-.262					
Training Attitudes	.205					
Computer Confid.	.219					
Model 3		.317	.244	4.367*** (7, 66)	.054	2.627 (2, 66)
Org. Commitment	.272*					
Love of Learning	.005					
Internal Work Mot.	-.213					
Training Attitudes	.224*					
Computer Confid.	.195					
Reaction-Lrn. Env.	.192*					
Reaction-Cont. Val.	.169					
Model 4		.341	.260	4.204*** (8, 65)	.024	2.408 (1, 65)
Org. Commitment	.247					
Love of Learning	.021					
Internal Work Mot.	-.214					
Training Attitudes	.215					
Computer Confid.	.191					
Reaction-Lrn. Env.	.231*					
Reaction-Cont. Val.	.201*					
Learning Avg.	.164					
Model 5		.605	.527	7.781*** (12, 61)	.264	10.184*** (4, 61)
Org. Commitment	.079					
Love of Learning	-.078					
Internal Work Mot.	-.188					
Training Attitudes	.052					
Computer Confid.	.358**					
Reaction-Lrn. Env.	.118					
Reaction-Cont. Val.	.077					
Learning Avg.	.098					
Opportunity to Use	.379***					
Peer Support	.315**					
Superv. Sanctions	-.179*					
Superv. Support	-.115					

*$p \leq .05$ (one-tailed) **$p \leq .01$ (one-tailed) ***$p \leq .001$ (one-tailed) level

holistic approach to determining the effectiveness of training program. Holton's model is the first attempt to comprehensively specify antecedent relationships, both direct and indirect, leading to motivation to transfer. Noe's model only specified environmental favorability as influencing motivation to transfer. The most important finding to emerge in this study was that environmental factors (opportunity to use, peer support, supervisor sanctions, and supervisor support) explained a large amount of variance in motivation to transfer. The addition of this group

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of variables in the fifth and final step of the hierarchical regression increased the R^2 significantly, explaining an additional 26.4% of the variance in motivation to transfer over the previous model (R^2=.605, adjusted R^2=.527). This finding is consistent with research linking environmental influences to transferring training and subsequent changes performance (Baumgartel,, Reynolds, & Pathan., 1984; Rouiller & Goldstein, 1993; Tracey, Tannenbaum, & Kavanagh, 1995; and Xiao, 1996). The present study extends these findings by showing that environmental variables have a broader influence affecting not only post-training behavior but motivation to transfer as well.

In the final model, the only environmental variables that failed to emerge as a significant predictor of motivation to transfer was supervisor support. The standardized betas in the final model indicated that opportunity to use (β=.379) had the strongest influence on motivation followed by computer confidence (β=.358), peer support (β=.315), and supervisory sanctions (β= -.179). Supervisor support was a non-significant predictor with (B= -.115). Supervisor support was significantly correlated with motivation to transfer (r=.397) although not as strongly as opportunity to use and peer support (r=.580 and .544 respectively). In addition, supervisor support was significantly correlated with the other 3 environmental variables entered simultaneously with it in the regression analysis. It is possible that little unique variance was left to be explained by supervisor support after accounting for the influence of the other environmental variables. The fact that peer support had a significant influence and supervisor support did not may be a function of the cohesiveness of the work group in this industrial setting.

It is interesting to note that none of the predictor sets entered in the regression model after organizational commitment (step 1) explained significant increments in variance until the environmental variables entered. Thus, neither situation specific attitudes (computer confidence and training attitudes), learning, or reactions to training (reaction to the learning environment and reaction to content validity) explained significant increments in motivation to transfer variance. It appears that motivation to transfer is largely a product of organizational commitment and transfer environment.

The pattern of changes in significant predictor variables in the regression models suggests the possibility of certain relationships. First, organizational commitment remained a significant predictor, though with declining influence, until the reaction variables entered the model. This suggests that the reaction variables and situational variables (e.g. training attitudes) together fully mediate the relationship between organizational commitment and motivation to transfer. This follows logically because trainees enter training with some level of commitment based on their basic attitude toward the organization, which is then altered based on their specific attitude toward the training and their reaction to the training itself. However, with the addition of environmental variables, the situational attitudes and reaction to training became non-significant predictors, suggesting that environmental variables fully mediate these training specific variables. These results point to the possibility that motivation to transfer is a product of basic commitment to the organization, mediated by attitudes toward and reactions to the specific training, which is further mediated by the transfer environment, specifically opportunity to use, peer support and supervisor sanctions.

The learning variable was not significantly correlated with motivation to transfer and it was not a significant predictor variable in the regression analysis. The lack of findings related to the learning variable may be a function of the way the learning variable was measured. Although the learning measure was based on tests created by subject matter experts, there was no assurance that tests were comprehensive or representative measures of the learning that took place during the training. In addition the learning measure was range restricted. The trainees were allowed to take the test as many times as needed to satisfy the 80% correct criterion for the mandated certification. Therefore, there was little variability in the learning score (mean=94.21, SD=2.30). Due to the unreliability of the learning measure the findings regarding the mediating role of learning, as well as, its direct effect on motivation to transfer are suspect.

Computer confidence did not follow the expected path of influence. Instead of being a significant predictor in the model when first entered and then becoming a non-significant predictor after the learning variable was entered (due to the mediating influence of the learning variable), as was expected, computer confidence did not become a significant predictor of motivation to transfer until the final model with the entry of the environmental variables. This indicates that computer confidence may have a more direct influence on motivation to transfer than originally thought. One possible explanation for the impact of environmental variables on computer confidence's influence may be found in the concept of self-efficacy, one's belief in one's capability to perform a specific task (Gist, 1967). Bandura (1977) proposed that self-efficacy can be gained by vicarious experience (watching others model the desired behavior) and verbal persuasion (being led by others into believing they can perform a task). Computer confidence may be strengthened with the addition of the peer support variable through the modeling component of self-efficacy and/or the supervisor support variable via verbal persuasion.

Taken together these findings lend a measure of support to Holton's comprehensive model of training evaluation. The findings suggest that individual attitudes and personality characteristics can influence a person's motivation to transfer training, as proposed by Holton and suggested by Noe (1986). Support was also found for a direct influence of transfer climate on motivation to transfer. The use of hierarchical regression allowed the influence of "early " entry variables (e.g., organizational commitment) to be seen and gave indications of possible moderated and mediated relationships (see James & Brett, 1984). These findings point to the need for examining training from a process point of view, looking at antecedents to key variables and outcomes of the training process through comprehensive training models.

The findings have several implications:

1) Before training design begins needs assessments should be conducted that incorporate measures of variables that may influence motivation to learn and motivation to transfer training, such as organizational commitment, love of learning, and training attitudes. In addition the needs assessment can give some assurance of content validity.

2) The findings related to the influence of computer confidence on motivation to transfer, suggest providing trainees with an opportunity to building confidence in their computer skills may increase motivation to transfer when computers are used as the delivery method. This finding points to the need for further research to determine if user confidence needs to be established when other new methods of delivery are introduced.

3) Environmental factors were found to have strong influences on motivation to transfer and to possibly to mediate the effect of the reaction variables. Care should be taken provide the necessary information, tools, and resources, as well as to minimize constraints to the use of performing on the job as taught in training. Supervisor sanctions had a negative influence and peer support had a positive influence on motivation to transfer; therefore, care should be taken to gain support for training both from trainees and supervisors. Reliable measures of transfer climate need to be developed to assess the favorability of the transfer climate within organizations. Additionally, further research needs to be done to determine how group dynamics or cohesiveness effects the roles of supervisor and peer support on motivation to transfer.

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Secondary School Administrator's Perception of Enhancing Self-Worth Through Service

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Ninety-two secondary school administrators (principals) completed a survey. Results of exploratory factor analysis showed that the 10-item Service Ethic Scale (SES) had one factor, explained 63.2 percent of the variance, and showed excellent reliability (Cronbach's alpha = .92). The Service Ethic Scale was significantly correlated with the Protestant Work Ethic and the development of ethical values and was not related to participants' sex, age, job tenure, and location of their schools (rural vs. urban).

The practical importance of helping others, providing services to others, and performing organizational citizenship behavior (OCB) is that these behaviors improve efficiency and effectiveness in organizations and in the society (Organ, 1988). The ideas related to "the desire to help others" are important to employers and employees in both public and private sectors.

The major purpose of the present study was to examine the secondary school administrators' (principals) perception of enhancing self-worth through service which was measured by a 10-item, 5-point Service Ethic Scale (SES) specifically developed for this study. Further, we investigated the relationships between the Service Ethic Scale and personality and demographic variables. Service Ethic can be defined as an individual's positive outlook and desire to provide services to others (help others) which may lead to an individual's enhanced self-worth and self-esteem. The notion of helping others has its roots in the history of education (i.e., service learning) and also in organizational behavior (i.e., organizational citizenship behavior) which will be reviewed very briefly below.

People in the teaching profession, such as teachers, educators, coaches, trainers, professors, and managers in the field of human resource development may have a strong sense of helping others when they perform their job duties and responsibilities and may gain a great deal of intrinsic reward and satisfaction out this profession. Therefore, it appears that the notion of service ethic is important for researchers and practitioners in the field of human resource development. Relevant research will be reviewed very briefly below.

Service Learning

In 1918, the NEA's Commission of the Reorganization of Secondary Education identified the spirit of service (i.e., the desire to help others) as one of the most critical areas of education for developing citizenship and ethical character (Sergiovanni, 1991). In the 1930s, the concept of service learning played a major role in President Franklin Roosevelt's New Deal.

During that period, community service was introduced in the form of the Civilian Conservation Corps (CCC). This structure allowed young Americans, previously unemployed, to become active in projects to better their communities. The Junior League, Rotary Club, and Lion's Club are also examples of service organizations (Sandler & Vandegrift, 1993).

During the 1960s, new service programs came into existence: e.g., the Peace Corps, Volunteers in Service to America (VISTA), and Teacher Corps. President Kennedy's 1961 inaugural address challenged Americans to ask what they could do for their country. With the

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changes in the last two decades, national interest shifted toward community service and the work ethic as a way to bring communities across America together in an attempt to solve some of the existing social ills.

Due to American's interests in this, Congress passed the National and Community Service Act of 1990 which encouraged the development of a "volunteer ethic" among the youth of America. This Act was designed to develop more youth programs during the summer and to fund community service projects of merit in individual states.

Senator Edward Kennedy has emphasized the power of community service: "By learning that they can make a difference in the lives of others, students discover their power to control their own lives" (Kennedy, 1991, p. 772). The national education strategy referred to as America 2000 includes an objective that "all students will be involved in activities that promote and demonstrate good citizenship, community service, and personal responsibility" (Sandler & Vandegrift, 1993, p. 10).

Organizational Citizenship Behavior (OCB)

For the past several decades, researchers have examined prosocial organizational behavior (Brief & Motowidlo, 1986), extra-role behavior (Katz & Kahn, 1978), and organizational citizenship behavior (OCB) (Organ & Ryan, 1995; Smith, Organ, & Near, 1983; Tang & Ibrahim, 1993). OCB "represents individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and in the aggregate promotes the efficient and effective functioning of the organization" (Organ, 1988, p. 4). According to Smith et al. (1983), these behaviors "lubricate the social machinery of the organization", "provide the flexibility needed to work through many unforeseen contingencies", and help employees in an organization "cope with the otherwise awesome condition of interdependence on each other" (p. 654).

There are two distinct types of OCB: One is called Altruism which emerges as "a class of helping behaviors aimed directly at specific persons". The other is named Generalized Compliance which is defined by "a more impersonal sort of conscientiousness, more of a 'good soldier' or 'good citizen' syndrome of doing things that are 'right and proper' but for the sake of the system rather than for specific persons" (p. 662).

Altruism is related to activities that are beyond the call of their duties, whereas Compliance deals with activities that are "right and proper". OCB and helping behaviors hold great "promise for organizational behavior research" (Schnake, 1991, p. 735).

Service Ethic as Related to Self-Esteem and Higher-Order Needs

Self-Esteem Self-esteem (SE) is "a global evaluation of the self" (Baumeister & Tice, 1985, p. 450) or a sense of worth or value (Rosenberg, 1965). People will develop attitudes and behave in ways that will maintain their level of self-esteem.

High self-esteem individuals (high SEs) have more favorable efficacy beliefs (Brockner, 1988), like the difficult task after positive feedback (Tang & Sarsfield-Baldwin, 1991), set high goals, have high certainty, good performance, and enjoy challenging and difficult tasks (Tang & Reynolds, 1993) than low SEs. Krebs (1970) suggested that extraversion is related to prosocial behavior, whereas neuroticism is negatively related to such behavior. Smith et al. further argued that people with a high level of neuroticism probably do not have the emotional stamina to concern themselves with others' problems therefore they may not want to help others. Pierce, Gardner, Cummings, and Dunham (1989) found that employees with a high level of organization-based self-esteem (OBSE) tend to be better organizational citizens. In this study, we examined the notion that services to others will enhance their feeling of self-worth and self-esteem.

Higher-Order Needs Among the content theories of motivation, Maslow's (1954) theory of needs hierarchy remains very popular among managers and students of organizational behavior.

Maslow's theory does provide an attractive and intuitively acceptable perspective to writers during the "human relations movement" period and still has a commonsense appeal to managers in our society today.

It is plausible that helping others may satisfy many of Maslow's higher-order needs (social, self-esteem, and self-actualization needs). In the present study, the Service Ethic Scale (SES) was developed based on suggestions in the literature (Tang & Ibrahim, 1994; Porter, 1961). Attitudes will predict behavior effectively only when there is high correspondence between the attitude object and the behavioral option (Ajzen & Fishbein, 1977; Tang & Baumeister, 1984). Since the SES is a specific work-related attitude, we believe that it will be related to another work-related personality variable, the endorsement of the Protestant Work Ethic.

The Protestant Work Ethic

The principal aspects of the Protestant Work Ethic (PWE) are hard-working, asceticism, and industriousness (Furnham, 1989; Weber, 1958). High Protestant Work Ethic subjects (PWEs) spent more time on a task and produced greater output (Merrens & Garrett, 1975), worked longer hours on their study and less time on leisure (Poulton & Ng, 1988) and viewed their commuting time as work time, and engaged in work-related activities (Greenberg, 1978) than low Protestant Work Ethic individuals.

Further, "Altruism might be interpreted as part of the Protestant Work Ethic syndrome" (Smith et al., 1983, p. 662). However, PWE was not investigated in their 1983 study. Only indirect evidence concerning the relationship between PWE and helping behavior was provided in the literature.

Helping others is probably the best way for all of the employees to achieve their destination, based on the norm of reciprocity and social exchange (Konovsky & Pugh, 1994). Based on these cultural values, it is predicted that PWE will have a strong relationship with the Service Ethic Scale.

Ethical Values

For the past two decades, we have witnessed heightened public concern about the failure of America's higher institutions of learning in preparing ethically responsible future leaders of business and government. In a 1983 Gallup poll, only 20% of the public expressed "a great deal of confidence" in big business. As a result of the poor public perception, codes of ethics, rare 20 years ago, are now commonplace among America's large corporations. Moreover, study of business ethics has become an integral part of many business schools' curriculums (Kumar, 1995).

It was also the interests of this study to see whether secondary school administrators in Louisiana would favor ethical values and ethics education. The teaching of an ethical decision-making framework to students as a means of helping them make better choices when faced with dilemmas would hopefully better prepare students for real-life situations in the workplace. It is plausible that Service Ethic will be positively correlated with the ethical values.

Method

Participants A total of 150 participants was randomly selected from 339 secondary administrators (principals) identified in the 1994-1995 Louisiana Directory of Schools. Superintendents from all school districts in the state of Louisiana were contacted for permission to survey administrators. Administrators' participation in this research was completely voluntary and their confidentiality was protected by answering the questionnaire anonymously. Participants received an introductory letter, a short survey questionnaire, a pre-addressed, stamped return envelope, and a stamped postcard (to indicate whether they would like to participate in and to receive the results of the study).

A total of 108 administrators responded to the survey. Six individuals did not wish to participate. Usable surveys were obtained from 92 administrators (27% of the population). The response rate was 61.3%. In this sample, there were 77 males and 15 females. In terms of the location of their schools, 17 were from urban areas, while 75 were from rural areas.

Measures Participants' demographic variables such as sex, age, number of years in present position (job tenure), and location of the school (urban vs. rural) were obtained. A 5-point Likert scale with disagree strongly (1), neutral (3), and agree strongly (5) as anchors was used for all other measures. A 19-item scale developed by Mirels and Garrett (1971) was employed to measure the endorsement of the Protestant Work Ethic (PWE). Items 9, 13, and 15 were reverse scored and the total score was calculated. The 5-item Ethical Values Scale measures participants' support of ethics/values education in secondary schools. The items are listed as follows: In-class activities to develop ethical decision-making skills and citizenship would receive my support. I openly encourage the implementation of class activities that help develop the ethical character of our students. In-class service projects (doing for others) that encourage citizenship and build ethical character would receive my support. Ethics/values education can be included in existing classes at the secondary level. Ethics/values education should be included in the secondary school curriculum.

Finally, administrators were asked to rate the Service Ethic Scale using the 5-point scale only if they have participated in volunteer work or community services. The 10 items are presented in Table 1. A total score was calculated for Ethical Values and the Service Ethic Scale.

Results

An exploratory factor analysis was employed to identify the major factor(s) of the 10-item Service Ethic Scale based on data collected from these 92 administrators. The results showed a one-factor solution for the Service Ethic Scale. Table 1 shows the factor loadings of these 10 items. These 10 items explained 63.2% of the variance and had an excellent reliability measure (the Cronbach's alpha = .92). Thus, it appears that all these items were measuring a very specific construct.

Table 2 shows the mean, standard deviation, the nomological network of the Service Ethic Scale, and the Cronbach's alpha of measures. The Service Ethic Scale (SES) was significant correlated with the endorsement of the Protestant Work Ethic (PWE) and Ethical Values (EV). The Protestant Work Ethic was also significantly correlated with Ethical Values. It is also interesting to note that the Service Ethic Scale was not associated with any of the demographic variables.

Results of multivariate analyses of variance (MANOVAs) showed that there were no significant differences between males and females regarding their age, tenure, PWE, EV, and SES (F (5, 85) = 1.32, p = .27, Wilks' lambda = .928). No differences between administrators from rural areas and those from urban areas were found for these same variables (F (5, 85) = 1.17, p = .33, Wilks' lambda = .936).

Finally, sex, age, tenure, location, PWE, and EV were used to predict the participants' SES scores using a step-wise multiple regression. The results showed that only PWE was a good predictor of SES (R square change = .17, F change = 18.31, p = .0000).

Discussion

The major purpose of the present study was to examine secondary school administrators' endorsement of the Service Ethic. Our results show that the 10-item Service Ethic Scale measures a very specific construct and has an excellent reliability measure. This scale is significantly correlated with the endorsement of the Protestant Work Ethic. Those who believe

Table 1. Factor Analysis

Item	Factor Loading
1. Service to others gives me an opportunity to give help to other people.	.86
2. Service to others is honorable.	.86
3. Service to others gives me a feeling of worthwhile accomplishment.	.86
4. Service to others gives me a feeling of self-fulfillment.	.86
5. Service to others provides an opportunity for personal growth and development.	.83
6. Service to others increases my self-esteem.	.82
7. I feel I am a better person when I help others.	.80
8. Service to others makes me feel that I am an important part of the community.	.75
9. Service to others provides an opportunity to develop close friendships.	.72
10. Service to others gives me a feeling of prestige and I gain respect in the eyes of others.	.55
Explained variance = 63.2%	
Cronbach's alpha = .92	

Table 2. Mean, Standard Deviation, Correlations, and Cronbach's Alpha of Major Variables

Variables	M	SD	1	2	3	4	5	6	7
1. Sex				19	21*	06	08	-01	-05
2. Age	49.09	5.29			34**	09	03	12	-10
3. Tenure	7.92	6.67				-13	-02	03	00
4. Location							-10	07	-11
5. PWE	65.16	9.39						30**	41**
6. EV	19.86	3.44							29**
7. SES	43.36	5.82							
Cronbach's alpha							80	84	92

Note. *N* = 92. Sex: Female = 0, Male = 1; Tenure was expressed in years. Location: Rural = 1, Urban = 2. PWE = Protestant Work Ethic. EV = Ethical Values. SES = Service Ethic Scale. All decimals have been omitted for correlations. **p* < .05, ***p* < .01.

that providing services to others will enhance their self-worth are also hard-working individuals. Thus, the Service Ethic Scale has captured the positive, uplifting feelings related to "volunteer ethic" or willingness to offer help to others.

Providing services to others and helping other people call for a lot of work and effort. Thus, only those who endorse the Work Ethic will be willing to exert their effort to achieve their service goals. Actor Paul Newman stated: "Helping is its own reward, and everyone should be encouraged to try it. It's surprising how it just feels right. Helping is human, that's all. It's part of human nature. It's the best part of human nature" (Newman, 1994, p. 4). Helping others will enhance one's own self-worth and self-esteem.

It is also possible that those who score high on the Service Ethic Scale will actually perform more services to others and display organizational citizenship behavior in organizations than those who score low. In the present study, we only examined few personality variables and no behavior measures were examined.

In the literature, Blood (1969) showed that adherence to pro-Protestant Ethic was positively related to job satisfaction. Belief in the Protestant Ethic was related to the importance of productivity and effort. Further, those who believe that money is a representation of their achievement tend to have lower satisfaction with work, pay, promotion, supervision, and coworker and have low life satisfaction in general (Tang, 1992, 1993). Thereby, people's attitudes toward money may be perceived as their "frame of reference" in which they examine their everyday life and may also play an important role in their job satisfaction. On the basis of the aforementioned studies and the results of the present paper, it stands to reason that public employees who have high endorsement of the Service Ethic may show a high level of Work Ethic endorsement which, in turn, may lead to a high level of job satisfaction.

Research suggested that students about to enter the nonprofit sector tend to value economic wealth to a lesser degree than did entrants to the profit sector (Rawls, Ulrich, & Nelson, 1975). However, several studies in the literature suggest that public managers experience significantly lower level of satisfaction than do their counterparts in business (Perry & Porter, 1982).

Employees and managers in the public or nonprofit sector (primarily government) provide services to citizens and people in the community. It is reasonable to believe that these workers' job satisfaction and performance levels (services) will be somewhat related to their endorsement of the Service Ethic identified in the present study.

As we mentioned earlier that people in the teaching profession, such as teachers, educators, coaches, trainers, professors, and managers in the field of human resource development may have a strong sense of helping others when they perform their job duties and responsibilities and may gain a great deal of intrinsic reward and satisfaction out this profession. We believe that the notion of service ethic is important for researchers and practitioners in the field of human resource development. It is also possible that teachers, professors, and educators may use the Service Ethic Scale as a possible selection tool to identify students who have high scores to enter the field of human resource development.

The results of the present study may provide the key information concerning employees' motivation and satisfaction to work in the service area. More research is needed to fill in the void in this area. Future researchers may want to expand the present model and investigate the nomological network of the Service Ethic Scale by using different variables, such as their endorsement of the Money Ethic (Tang, 1992, 1993), job satisfaction, and other objective, measurable, behavior indicators to further establish the validity and reliability of this scale.

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Acceptable Vs. Marginal Police Officers' Psychological Ratings: a Longitudinal Comparison of Job Performance

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During a three year period, a police department hired 162 candidates who received "acceptable" psychological ratings and 71 candidates who received "marginal" psychological ratings. A causal-comparative research design was used to determine if there were significant statistical differences in specific job performance variables between these officers. The results of multivariate analyses of variance, t-tests, and chi-square procedures as applicable, showed no significant differences between the two groups on any of the job performance variables.

When police officers commit acts that grossly violate the public trust, the results are usually a media frenzy which then prompts police officials to review their background screening process, especially the results from the officers' preemployment psychological exam. One major concern of police departments is to successfully recruit, screen and hire police candidates who will be successful not only during their academy training and probationary period, but throughout a tenured law enforcement career.

In 1987, a major metropolitan police department began using an in-depth preemployment psychological exam as part of the background screening process in its selection of police officers. During the preceding years, there had been many incidents involving police officers (e.g., arrests for drug possession and usage, soliciting prostitutes, thefts) which indicated an urgent need to improve the quality of the personnel selection process. The purpose of the psychological evaluation was to screen out police applicants who possessed mental conditions or psychological characteristics that made them a high risk for the position of police officer (Valle, Axelberd & Capp, 1986). Based on the department's preemployment psychological screening contract, examples of conditions and characteristics tested for included: psychosis, lack of impulse control, high degree of immaturity, poor judgment capabilities, character disorders, tendencies to be very passive or aggressive in critical situations, high anxiety levels or inability to cope with the stress of police work, very poor socialization skills, an inability to interact with the public, and racial or ethnic prejudice.

Additionally, the psychological evaluation would identify those characteristics in individuals qualifying them as good candidates. These included: good academic potential, capacity to handle responsibility, judgment during crisis situations, good socialization skills, flexibility, good self-concept, and an ability to manage stress.

During the period 1987-90, police candidates were rated as "unacceptable," "acceptable" or "marginal" on their preemployment psychological exam. The psychological instruments used to determine these three ratings were the Minnesota Multiphasic Personality Inventory (MMPI), the California Personality Inventory (CPI), the Otis-Lennon School Ability Test (OLSAT), the Rorschach Psychodiagnostic Inkblot, the Law Enforcement Background Questionnaire, and a clinical interview. According to the police department's guidelines, a rating of "unacceptable" meant the applicant had failed to meet minimum standards and was considered a high risk for the police profession. These applicants were automatically disqualified from further processing. An applicant rated as "acceptable" had met minimum standards and either had none or limited areas of concern. These applicants automatically advanced to the next stage of the process unless other disqualifying data surfaced. An applicant rated as "marginal" had met minimum standards, but possessed multiple or major areas of concern which warranted thorough

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investigation during the background process. These applicants were hired if the background process could not substantiate the areas of concern, or if no other disqualifying information was found.

This study was conducted to compare the job performance of police candidates who were hired with "acceptable" and "marginal" psychological ratings to determine if significant differences existed between the two groups on several job performance variables.

Review of the Literature

A review of the literature shows that most police departments rely upon psychological testing to predict how well applicants will perform in the area of citizen complaints or commendations, automobile accidents, tardiness, sick leave, academy performance, completion of probation, and other potential problematic behaviors. Inwald (1985) has indicated that while some psychological tests are now being developed and validated specifically for law enforcement screening (including the Inwald Personality Inventory), none are 100% effective in predicting which officers will eventually have problems on the job. She further asserted that, "while psychologists can identify most candidates suffering from psychoses or other severe character disorders that may affect functioning on any job, they cannot (and may never be able to) do more than increase the odds of screening out poor performers" (p. 370).

In an effort to address the problem of distinguishing successful and unsuccessful police applicants, and predicting their success or failure, Saxe and Reiser (1976) randomly selected officers who had previously taken the psychological exam with the Los Angeles Police Department. They compared the MMPI scores of 100 Los Angeles police officers who had stayed in the force for a minimum of three years (successful group), 100 who had been accepted into the force but left within three years (attrition group), and 100 who had applied to the force but were rejected due to failing the psychological exam (rejected group). Results showed that the successful group differed significantly from the rejected group on six of 13 scales; the successful group was significantly higher on two scales; and the rejected group was significantly higher on four scales. Additionally, the successful group differed significantly from the attrition group on five dimensions; the successful group was significantly higher on four scales; and the attrition group was significantly higher on one scale. They summarized that although significant differences were found, these differences were in the normal range and too small in terms of traditional clinical standard scores, and, therefore, not meaningful in making a clinical differentiation between successful and unsuccessful police applicants.

Gettinger (1981) reported on the hiring practices of two police departments, the Los Angeles city police (LAPD) and the Los Angeles County Sheriff (LASD), both comparable in size, salaries, and levels of professionalism. This study showed that the LAPD rejects about 50% of all candidates on psychological grounds, while the LASD turns down about 10%. The LASD's screening process is reportedly less rigorous than the LAPD's. However, the LASD's psychologist indicated that when he conducted 5-year and 10-year follow-up reports on officers in trouble or doing especially well, he rarely found that the initial testing indicated that they would perform especially poorly or especially well, intimating that the high rejection rate by the LAPD was not necessarily warranted.

The Los Angeles Sheriff Department psychologist's conclusion was supported by Lester, Babcock, Cassisi, and Burnetta' (1980). They compared the performance of applicants hired by a municipal police department after recommendations by the psychologist: 43 of 50 were recommended by the psychologist and hired, 23 of 28 were recommended with reservations and hired, and 17 of 41 were recommended for rejection but hired. The performance of the 17 rejected recruits was compared with that of the 43 recommended on performance measures such as tenure, promotions, supervisors' ratings and senior peer ratings. No differences were found between the two groups. Although the criteria used by the psychologist and the police department differed, they were congruent for 76% of the applicants.

In spite of a few identified weaknesses, these studies suggest a great need for more in-depth and longitudinal follow-up on hired applicants who were rated as "acceptable," "marginal," and "unacceptable" to help determine the accuracy of decisions that are made using different types of tests and predictors.

In a study similar to the present one, Borum (1991) examined the differences between applicants rated as "suitable," "marginally suitable," or "unsuitable" in screenings on the MMPI and the IPI. His study is the only one that primarily focused on "marginally suitable" candidates. Results of Borum's study showed the prediction of "suitable" applicants to be quite strong at 89.3% (MMPI = 93.7%; IPI = 92.9%). The greatest classification error was in predicting "marginal" and "unsuitable" subjects as "suitable." His findings also showed that the marginal group clearly presented the most difficult correct classification problem, however, since scores from this group were in the borderline elevation range, more heterogeneity and more difficult classification were expected. Borum concluded that psychological tests do contribute to suitability ratings for law enforcement applicants. He also indicated that this study supports the belief that test results can be a significant component in examiners' decisions regarding applicant suitability.

Subjects

A total of 538 police officers was analyzed in this study. These officers were hired by a major metropolitan police department during the period from 1987-90, after undergoing a stringent preemployment psychological exam. Two hundred and sixty-four applicants had received "acceptable" ratings and 274 applicants had received "marginal" ratings. After completing psychological screening, these applicants were scheduled to complete other stages of the background process. Many applicants from both groups were subsequently disqualified due to failing various aspects of the remaining background process (e.g., negative employment or traffic history, substantiated areas of concern, failed to keep appointments, or declined position). Consequently, the total number of police applicants hired with "acceptable" ratings was 162 and the total number hired with "marginal" ratings was 71. This population of 233 consisted of 44 White, 74 Black, and 115 Hispanic applicants. There were 191 males and 42 females.

Procedures

A Police Officer Data Sheet was developed to extract and record all pertinent background information and data on the specified job performance variables for each officer. Data were collected beginning with the officers' police academy training to the end of a five-year period for each officer. The background file of each officer was reviewed to verify the psychological rating and compile demographic information. A review was then conducted of each officer's police academy record, personnel file, and Internal Affairs' file. A causal-comparative research design was used to compare both groups on eleven performance variables: police academy performance, supervisors' evaluations, commendations, awards, reprimands, sick time, citizen complaints, time losses, reassignments, promotions, and separations. Table 1 presents the research questions, the hypotheses analyzed, and the statistical procedures that were used to conduct this study. The following is an analysis of the results on each performance variable.

Results

Police Academy. In examining police academy performance, there were no significant differences between the acceptable and marginal officers in completing the six-month training program. However, the acceptable group did have a slightly higher percentage of officers that completed the academy or voluntarily resigned, while the marginal group had a slightly higher percentage of officers recycled into a subsequent class or terminated. Further, although there were no significant differences for grade point average and supervisors' evaluation ratings, the marginal group had a higher percentage of officers (13%) with lower GPA scores compared to the acceptable group (3%). The majority of officers from each group had a B grade average, with only

4% from each group scoring an A grade average.

Supervisors' evaluation ratings while in the Academy were about equal for both groups with performances ranging from below average to above average.

Field Officer Training (FTO) Program. In reviewing performance during the Field Training Officer (FTO) Program, there were no significant differences between the groups in completing the program; both had an 85% FTO completion rate. The acceptable group had a slightly higher percentage of officers who voluntarily resigned, while both groups had similar percentages for officers extended or terminated from the FTO Program.

Additionally, there were no significant differences between the groups on mean ratings of the average and final FTO evaluations. It was noted that neither group received above satisfactory as their average rating. While both groups had similar representation (8%) in the above satisfactory category for their final rating, the acceptable group had 86% of its officers receive satisfactory ratings compared to 81% of the marginal group. Both groups incrementally increased in their performance ratings during the four-month FTO Program.

Probationary Period. In examining both groups' performance during the remainder of the probationary period, there were no significant differences in completion of probation. The acceptable group had an 82% completion compared to the marginal group's 87%. The acceptable group had 4% resignation while the marginal group had no resignations. Both groups had similar percentages of officers extended on probation. The acceptable group had a 9% termination rate by the end of the probation period compared to 7% for the marginal group.

There were also no significant differences between the groups on mean ratings of the average and final probation evaluations. The acceptable group had 92% of its officers receive satisfactory as the average rating, while the marginal group had 97%. The acceptable group had 4% of its officers receive an above satisfactory rating while the marginal group had no officers with above satisfactory rating. On the final ratings, at the end of the probationary period, a higher percentage of officers from the acceptable group received above satisfactory ratings while a higher percentage from the marginal group received satisfactory ratings. Both groups also showed a gradual increase in their evaluation ratings during the remainder of the probationary period.

Yearly Evaluations. In examining both groups' performance on yearly evaluations for a four year period, there were no significant differences in mean ratings. The acceptable group had a slightly higher percentage of officers who received above satisfactory ratings for each year except the second year. During that year, both groups performed identically. During two of the four years, the marginal group had no officers to receive below satisfactory ratings while the acceptable group had minor representation at that level for every year. Again, the mean ratings of each group increased incrementally each year.

Major Areas. Job performance in major areas consisted of comparing the groups on the frequency of awards, commendations, reprimands, citizen complaints, sick hours, and time losses. The results of t-tests showed no significant differences between the groups on any of these major areas. The acceptable group had slightly higher mean ratings on commendations, awards, and sick hours used. The acceptable group had 5% of officers who never used any sick time compared to 2% in the marginal group; both groups had less than 7% of officers who exceeded the acceptable range of sick hours used. The marginal group had slightly higher mean ratings on citizen complaints received. Both groups had the same mean rating for reprimands. Noted differences among the variables in the groups are probably attributable to low frequency of occurrences and fluctuations in frequency. For example, approximately 75% of the officers from both groups received between 2 to 25 commendations, approximately 20% received between 26 to 50, and less than 5% received between 51 to 70 (70 was maximum number). In another example, approximately 15% of the officers from both groups had never received any citizen complaints, approximately 80% had received between 1 to 15 complaints, and less than 5% had received between 16 to 24 complaints (24 was the maximum number).

The next measure of job performance was time loss (suspensions or forfeiture of time) from the job. Results of a chi-square procedure showed no significant differences between the groups on disciplinary actions that resulted in time losses. The acceptable group had 23% of its officers to receive time losses compared to 30% from the marginal group.

Reassignment. Reassignments into specialized units were measured based on the number of officers from each group who had been assigned into specialized units (e.g., Robbery, Homicide, or Training) from their initial street duty, i.e., patrol. The results of a chi-square showed no significant differences between the groups. The acceptable group had 29% of its officers reassigned into specialized units compared to 36% from the marginal group.

Table 1
Data Analysis of Research Questions and Hypotheses

Research Question: Is job performance of police officers with "acceptable" psychological ratings significantly different than job performance of police officers with "marginal" psychological ratings?

Hypothesis (Ho): There is no significant difference in job performance of police officers with "acceptable" psychological ratings and police officers with "marginal" psychological ratings.

Specific Research Questions	Hypotheses	Required Data	Method	Data Analysis
Is police academy performance higher for "acceptables?"	There is no difference in academy performance	Graduate, G.P.A. & Final Ratings	Document analysis	Chi-Square Manova Mancova
Do "acceptables" perform better in the FTO Program?	There is no difference in performance in the FTO Program	Average, Final Ratings, FTO status	Document analysis	Repeated Anova Ancova Chi-Square
Do "acceptables" perform better during the Probationary period?	There is no difference in performance during Probation	Average, Final Ratings, Probation status	Document analysis	Repeated Anova Ancova Chi-Square
Do "acceptables" perform better during yearly evaluations?	There is no difference in performance during yearly evals	Yearly Ratings	Document analysis	Repeated Measures Anova Ancova
Do "acceptables" perform better in major areas?	There is no difference in performance in major areas	Comms/Reps Compls/Sick Awards Time Loss	Document analysis	T-tests Chi-Square
Do more "acceptables" get reassigned?	There is no difference in reassignments	Transfer notices	Review officers files	Chi-Square
Do more "acceptables" get promoted?	There is no difference in promos.	# ofcs promoted	Review register	Chi-Square
Do "acceptables" have fewer separations?	There is no diff. in separations	# ofcs fired/ resigned	Review officers files	Chi-Square

Promotions. Promotions were measured based on those officers from each group who were promoted within the five-year time frame. Results showed no significant differences between the groups. Only two officers, both from the acceptable group (one White, one Black), were promoted. Both were male, 21 years old, with a high school diploma when hired, single, and had no children. Also, neither officer had a college degree at the time of his promotion.

Separations. Separations were measured based on the number of officers still employed and those who had separated (resigned/terminated) by the end of their fourth year in permanent status (comprises the 5-year time frame). Results showed no significant differences between the groups. These findings are congruent with Spielberger's (1979) supposition that the clearest indication of mistakes being made in the selection process is the termination of an officer for improprieties in behavior or performance. He asserted that a distinction must be made between officers terminated and officers who resigned with satisfactory performance. This study shows that the groups were almost equal in their employment status of still employed, resigned, or terminated. Therefore, if any mistakes occurred within the selection process, both groups were equally affected. Separations for each group were identified in several areas. In the acceptable group, 6 did not complete the academy, 4 were terminated for not meeting standards during probation and 1 after probation, 5 were terminated for misconduct during probation and 2 after probation, 8 resigned (including 1 line of duty death): a total of 26 (16%) separations. In the marginal group, 3 did not complete the academy, 2 were terminated for not meeting standards during probation, 3 were terminated for misconduct during probation and 1 after probation, 1 resigned due to disability: a total of 10 (14%) separations.

Conclusions

The goal of preemployment psychological screening is to eliminate high risk applicants and those applicants who may not be able to perform the job. Applicants who are rated as marginal may or may not fit into the classification of high risk, and they may or may not be considered as being able to handle police work.

Previous research has shown the complexities involved in trying to distinguish successful and unsuccessful police performance. It has also been demonstrated that marginal ratings clearly present the most difficulty in correct classification (Borum, 1991). Fitzsimmons (1986) has indicated that the majority of good and average police applicants fall between opposite extremes of those who are superior and those who are at very high risk. Defining the line between average and high risk candidates is the difficult part of the screening process. A possible solution to this dilemma may be the combination of a comprehensive psychological exam and a very stringent background screening process. According to the Consortium of Police Psychologists (COPPS), applicants rated as marginal are considered as viable candidates as long as the areas of concern are thoroughly scrutinized during the background investigation process. These applicants are also legally employable based on standards established by the American Psychological Association (APA).

The police officers in this study were hired under a comprehensive preemployment psychological screening program that has now been in existence for several years. They were also subjected to an in-depth background investigation as reflected by the fact that 52% (282) of the applicants (538) were not hired. Theoretically, based on the very thorough initial screening procedures and other counseling services provided by the police department, performance by both groups should be about equal. As indicated by the results, there were no significant differences between the groups. In fact, on several positive job performance variables (probation completion, reassignments, separations) percentages for the marginal group were slightly more favorable than the acceptable group. Both groups showed consistent and parallel increases on all performance evaluation ratings. In summary, this study shows that the majority of the marginal officers' performance was just as good as the acceptable officers.

It must be noted that there may have been differences between the groups on some of the performance variables, but they were not detected possibly due to low variability in the performance variable, or due to small sample sizes on subgroup comparisons. The results of this study may be generalizable to other major urban police populations with similar cultural, ethnic, and gender profiles.

Recommendations for Police Department Human Resource Programs. A number of observations were noted while conducting this investigation. Based on these observations, the following recommendations were made.

1. There were a lot of inconsistencies in the probationary evaluation ratings (beyond the FTO Program). Quite often when police officers were rated by a new sergeant, the new sergeant lowered the rating without any documented reason(s) for the decrease, e.g., reprimand, citizen complaint, late for roll call. It appeared as though the officers were being penalized for being assigned to a new sergeant. The reverse also occurred but not as often; the new sergeant increased the evaluation rating without documenting the reason for the increase, e.g., commendations, letters of appreciation, awards. The levels of productivity were the same and the written comments were basically unchanged. This finding supports previous research (Spielberger, 1979) regarding subjectivity in evaluation ratings. Decreases or increases in overall evaluation ratings should be well-documented, with specific reason(s) for them. There should be a notation that the rating was discussed with the officer, listing areas in need of improvement or areas in which improvement was noted.

2. Several officers on probation received very good evaluation ratings and praises regarding their potential to become top-notch officers, then were recommended for termination the following month. There usually was no indication of a problem on the job. The incidents they committed to cause their termination (usually Internal Affairs investigation) happened unexpectedly and apparently did not interfere with other job performance areas. This is also probably due to the lack of continuity in supervisors during the probationary period. If possible, the probationer officer should be assigned to the same squad and sergeant after completing the Field Training Officer Program. Another option would be to at least reduce the number of sergeants that the officer is assigned to. This would allow for more consistency in monitoring the officer's progress and identify potential job performance problems.

3. When evaluations were done by the same sergeant, ratings were more consistent on a monthly basis, with progressive improvement. Based on very specific comments, it was obvious that the sergeant was familiar with the officer's performance. This is similar to the previous recommendation. When there was consistency in supervisors, ratings were more constant and reflected a relationship based on familiarity between supervisor and subordinate.

4. Most of the Field Training Officers' ratings during the fourth month had the highest rating; the reasons may be due to the increased skills level of the officer, or increased effort by the officer to ensure being released from the FTO Program. No inconsistencies were noted. Very few officers were extended or recycled back into the FTO Program. The program appears to be working as it was designed.

5. Several officers sustained injuries during their probation period and were assigned to administrative functions in a "light duty" capacity. Some of those officers never returned to their Patrol assignment and some returned after completing their probation period. This area should be closely monitored to ensure that probationary officers do not "get lost" in administrative assignments and fail to develop their basic street experience.

6. Officers assigned to administrative duties in a "light" or "limited" duty status received very high evaluation ratings (usually higher than many patrol officers) even though the work being performed is not within the duties of a police officer. These officers also receive the salary of a full-duty police officer. This is an area that needs to be closely examined. For those who sustained non-duty related injuries and are assigned in a "light" or "limited" duty status, perhaps consideration should be given to assigning them to non-combat status pay for the duration of that status.

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An Analysis of the Phase Model of Burnout

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The Phase Model of Burnout provides a valid operational definition of burnout and allows determination of who is burned out and how much. Because the model covaries well with nearly 400 variables, it can be used in HRD research as a tool to determine how people feel about life in their work group and organization at any given moment, and what kinds of problems these work groups can be expected to have or not have depending on how burned out their members are. Because burnout is a work group phenomenon, it can be ameliorated by appropriate organization development and design. The model can be used by HRD practitioners in interventions to assist diagnosis, motivate remedial action, guide choices for intervention design, and measure intervention progress.

The notion of burnout has become popular in discussions and descriptions of the life of individuals, organizations, and societies. Burnout is a phenomenon that many workers experience and most workers see in someone else. It can ruin the quality of life of those who burn out and negatively affect the lives of those close to its victims.

This article is a partial literature review that describes the phase model of burnout in some detail, including the three sub-domains and phases; the power of the model in relation to other variables; and how the model can be used in human resources development.

A Theoretical Base. The entire structure and environment of an organization can be a major cause of burnout in the members of that organization. The burnout, in turn, contributes to both physical and mental illness of the individuals in the organization and those around them, and to the retardation and potential failure of the organization to achieve its mission, goals, and objectives. This theoretical base drives the need for being able to determine, why burnout happens, where and when burnout happens, and what can best be done to reduce it, so that organizations and their members can be as successful as their other characteristics and environment allow them to be.

The Maslach Burnout Inventory. The Maslach Burnout Inventory, or MBI (Maslach & Jackson, 1981a, 1986a) has some value as a tool for individual and organization analysis. The MBI has 25 items that use a Likert scale to ask about how things are at work, and how the respondent feels, at that time, about how well he or she is coping with the stresses of that environment. (See the following example.) Most people respond in 5-10 minutes.

____1. I feel emotionally drained from my work.

The phase model rests on each individual's score on each of three sub-domains. It assumes that the most virulent aspect of burnout is emotional exhaustion, more than feelings of a lack of personal accomplishment, which are both considered more virulent than depersonalization. (See Table 1.)

Table 1. MBI Sub-Domains Definitions

Sub-domain	Definition
Depersonalization	High scores distinguish those who tend to view people as things or objects, and who tend to distance themselves from others.
Personal accomplishment (reversed)	High scores identify respondents who see themselves as performing poorly on a task they evaluate as not being particularly worthwhile, and which has negative influences on coworkers.
Emotional exhaustion	High scores indicate individuals who see themselves as operating beyond their comfortable coping limits, and as approaching "the end of the rope" in psychological and emotional senses.

Note. From "Global burnout: A Worldwide Pandemic Explored By The Phase Model," page 40, by R. T. Golembiewski, R. A. Boudreau, R. Munzenrider, & H. Luo. Copyright 1996 by JAI Press Inc.

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The Phase Model of Burnout

A major problem for describing burnout as a researchable phenomenon has been the lack of a suitable operational definition (Golembiewski, personal communication, January 17, 1995). The phase model of burnout provides an operational definition different from most offered in research on stress, which usually focus on the number and severity of stressors at work. The MBI focuses on how the respondents experience stress and stressors, no matter their type, number, or severity. The phase model also accounts for the wide variety of acceptability of stress by each individual in an organization and at any given point in time. This is an important capability because the same stressors at the same time can be energizing for some individuals and enervating for others, and at different times have the opposite effects on each set of individuals, depending on their current coping skills and attitudes (Golembiewski & Boss, 1992).

The phase model of burnout has eight stages (phases) that describe an increase of virulence with each successive phase (Golembiewski & Munzenrider, 1988; Golembiewski et al, 1996). The eight phases rest on norms that differentiate each subject's scores as High or Low on the three sub-domains of the MBI in the order shown in Table 2. The research on the phase model is the testing of the phases for covariants.

Table 2: The Eight-Phase Model of Burnout

	Progressive Phases of Burnout							
Sub-domains	I	II	III	IV	V	VI	VII	VIII
Depersonalization	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi
Personal accomplishment (reversed)	Lo	Lo	Hi	Hi	Lo	Lo	Hi	Hi
Emotional exhaustion	Lo	Lo	Lo	Lo	Hi	Hi	Hi	Hi

Note. From "Global burnout: A Worldwide Pandemic Explored By The Phase Model," page 54, by R. T. Golembiewski, R. A. Boudreau, R. Munzenrider, & H. Luo. Copyright 1996 by JAI Press Inc.

Progression of Phases There is no expectation that any individual will progress through every phase of the model as the level of his or her burnout increases. In fact, such a progression seems psychologically improbable. See the progressions from phase II to phase III, and phase IV to phase V to confirm this.

The phase model proposes only the progressive virulence of the phases, so that people in any phase are better off (experiencing less stress and its effects) than people in any more advanced phase. An example of this is shown in a study of nineteen physical symptoms of burnout. In Table 3, the data on all the symptoms are aggregated.

Table 3: One-Way Analysis of Variance, Total Symptoms, versus Phases of Burnout

	Phases								
	I (352)	II (109)	III (193)	IV (124)	V (107)	VI (176)	VII (109)	VIII (367)	F-Ratio (df=7, 1537)
Total symptoms	33.5	34.2	33.9	39.5	38.7	40.1	40.5	42.6	39.628*

* Indicates $P < .001$

Note. Figures in parentheses indicate number of respondents. From Phases of Burnout: Developments in Concepts and Applications, p. 70, by R. T. Golembiewski and R. F. Munzenrider. Copyright 1988 by Praeger Publishers.

These data show a high probability of non-random variation with the phases, and the variation is both robust and regular by pairs of phases with over 96% of pairs varying progressively.

In significant addition, the phase model encompasses two modes of onset, which is beyond the specificity of other operational definitions. Chronic onset of burnout may be indicated by a progression through phases I->II->IV->VIII as the experience of stressors accumulates over time. Acute onset of burnout, perhaps brought on by a divorce, may be indicated by progression through phases I->V->VI or VII, then finally to phase VIII. Alternative sequences, depending on one's mode of coping by sacrificing either task and/or relationships, could be through phases I->II->VI->VIII, or I->III->VII->VIII (Golembiewski & Munzenrider, 1988; Golembiewski et al, 1996).

Internal Validity of the Phase Model. Internal validity of the phase model is determined by examining whether different populations respond to the MBI with a similar cognitive structure (Golembiewski & Boss, 1992). The main population for comparison comes from a study of a federal agency that helps people. This population (N=1535) provided sufficient data for the assignment of universal norms as the dividing lines between high and low on each of the three sub-domains (Golembiewski & Munzenrider, 1988; Golembiewski, Munzenrider & Stevenson, 1986). Analysis of the responses from this population shows three factors (Golembiewski, Munzenrider & Carter, 1983). The intraclass correlation coefficient is .96, which accounts for 92% of the variance (Golembiewski & Munzenrider, 1988). Therefore, this population has been used as the target matrix for comparison with other populations. Factor analyses of many populations in the United States and around the world have generated similar structures.

External Validity of the Phase Model. Most of the research on stress and burnout have objective measures that show only weak or random association (e.g. Steffy & Jones, 1988). The tests of external validity of the phase model of burnout rest on the model's ability to covary with variables describing the quality of life in the contexts tested, blood chemistry, etc. The literature strongly shows the expected pattern on almost all of the 300+ variables studied by self-reports and the still -small panel of "objective" or "hard" variables. As the phases go, so go the other variables: deleterious outcomes increase with advancing phases; positive outcomes decrease with the progressive phases. The covariants usually "show a distinct step-ladder effect, phase by phase," meaning that they fall in a consistent and expected direction in 80-90% or more of the cases, with 30-60% of the paired-comparisons often attaining statistical significance (clearly better than the 5% expected by chance, and far beyond the association characteristic of research in the behavioral and organizational sciences), (Golembiewski & Boss, 1992, p. 125). Clearly, external validity has been achieved.

Effects of Burnout. Kim (1990) notes three aspects of the relevance of burnout to our society: concern for the health and welfare of people, costs to organizations, and the ubiquity of advanced burnout. Table 4 addresses the first two of those aspects.

Table 4: Selected Major Covariants of Burnout in 1995 Cross-National Panel

I. Higher burnout or strain tend to be associated with higher levels of:

- physical and emotional symptomologies (e.g. Cox, Kuk, & Leiter, 1993; Golembiewski, Boudreau, Goto, & Murai, 1993; Kelloway & Barling, 1991; Lin, Sun, & Golembiewski, 1996)
- spurning the assistance of people helpers (e.g. Cheku, Wong, & Rosen, 1994; Cheku & Rosen, 1994)
- uncertainty about social realities and evaluations (e.g. Buunk & Schaufeli, 1993)
- helplessness (e.g. Golembiewski, Sun, Lin, & Boudreau, 1995)
- role ambiguity (e.g. Capel, 1987)
- escape-avoidance coping (e.g. Chan & Hui, 1995; Rees & Francis, 1991)
- intent to leave employing organization (Firth, McIntee, McKeown, & Britton, 1986)
- absenteeism & turnover (Firth & Britton, 1989)
- negative emotional arousal (Kelman & Melamed, 1989; Naisburg, Fenning, & Elizur, 1995)
- cardiovascular risk factors (Appels & Schouten, 1991; Melamed, Kushir, & Shirom, 1992)
- externalization (Wilson & Chiwakata, 1989)

II. Higher burnout or strain tend to be associated with lower levels of:

- social support (e.g. Cheku, Wong, & Rosen, 1994; Winnubst, Marcelissen, & Klieber, 1988)
- autonomy (e.g. Pines, 1993)
- organizational "healthiness," as in less adequate problem-solving and task environments (e.g. Cox, Kuk, & Leiter, 1993; Pines, 1993; Dell'Erba, Rizzo, & Pancheri, 1994; McCulloch & O'Brien, 1986; Price & Spence, 1994; Van der Ploeg & Leeuwen, 1990)
- job satisfaction (e.g. Golembiewski & Luo, 1996; Dolan, 1987; Gibson, McGrath, & Reid, 1989; Iverson, Olekans, & Erwin, 1994)
- job involvement (e.g. Golembiewski, Sun, Lin, & Boudreau, 1995)
- self-rated productivity (e.g. Golembiewski, Boudreau, Goto, & Murai, 1993; Boudreau, 1996)
- job challenge (Friesen & Sarros, 1994)
- creativity (Noworol, Zarczynski, Fafrowicz, & Marek, 1993)

- marital satisfaction (Greenglass & Burke, 1988; Greenglass, Fiskenbaum, & Burke, 1994)
- supervisory support (e.g. Greenglass & Burke, 1994)
- trust (e.g. O'Driscoll & Schubert, 1988)
- sense of psychological community (Pretty, McCarthy, & Catano, 1992)
- hardiness (Boudreau & Golembiewski, 1995)

Note. From "Global burnout: A Worldwide Pandemic Explored By The Phase Model," pages 19-20, by R. T. Golembiewski, R. A. Boudreau, R. Munzenrider, & H. Luo. Copyright 1996 by JAI Press Inc.

Other studies show covariance of the model with many more health and organizational cost variables.

The distribution of burnout is bimodal, with a North American average (N = 24,721) of 43.2% of respondents falling into the phases of least burnout, and an average of 41.5% falling into the advanced phases of burnout. The remainder, approximately 15%, falls somewhere in the middle. Burnout is not a uniquely North American phenomenon. The global averages (N = 6,692) are 27.5% in Phases I-III, 19.3% in Phases IV-V, and 53.2% in Phases VI-VIII (Golembiewski et al, 1996). Initial studies show that the Japanese work populations have the largest percentages of people in the advanced phases (Golembiewski & Boudreau, 1989; Golembiewski et al, 1996). This fact may be attributable to the Japanese culture which encourages social distancing and the high number of hours put in at work.

Adding to the problem of ubiquity of burnout is its persistence. Table 5, encompassing twelve organizations, shows substantial stability within the phases over periods of two months to three years.

Table 5: Summary of Persistence of Phases in 12 Organizations (N = 1,631)

No change	25.8-50.0%
No change, or a decrease of one phase of burnout	43.2-63.6%
Stability within the phases of least-advanced burnout	49.8-81.1%
Stability within the phases of most-advanced burnout	49.1-73.5%

Note. From "Global burnout: A Worldwide Pandemic Explored By The Phase Model," pages 173-178, by R. T. Golembiewski, R. A. Boudreau, R. Munzenrider, & H. Luo. Copyright 1996 by JAI Press Inc.

There is a strong tendency for people in the least and advanced phases of burnout to keep their phase assignments over time, while the people in the middle move toward one of the two ends. Golembiewski and Boss (1992) speculate that the movement from the middle probably occurs quickly for most people. Of course, this tendency does not hold for individuals who experience acute burnout, which may have a rapid onset and just as rapidly abate.

Uses of the MBI. Administering the MBI and applying the phase model may be useful in needs assessment, design, and evaluation in the sequence of human resources development intervention activities. While the phase model deals only with more or less, not "on" or "off," common sense tells us that people who are "burned out" may not be ready to take on more activities, especially when combined with the stress of learning new behaviors and then applying them on the job. Common sense also tells us that perhaps people should not pursue careers along paths on which burnout tends to be high without having some idea of what to do to protect themselves from the causes of burnout.

Diagnosis. Major prerequisites for success described in the organization development literature are the preparedness of a host population for an intervention and determining the appropriate depth of the intervention (e.g., Dyer, 1981; Harrison, 1971). Use of the MBI is a quick, easy way to determine the existence of organizational problems and potential entry points for detailed diagnosis and development. It can also provide insight into how individuals feel about their day-to-day existence in their organization and how ready they may be for any given human resources development intervention.

Relatedly, the phase model helps identify specific problem sources and specifics (e.g., Golembiewski, Hilles, & Daly, 1987) for matching an appropriate intervention to a diagnosis. For example, if a high proportion of IIs is discovered in a work group or population, it is clear that high levels of depersonalization are occurring. This points to the need for organization development interventions that we know can work (Golembiewski, Proehl, & Sink, 1981, 1982; Nicholas, 1982; Golembiewski & Sun, 1990; Golembiewski, 1991) to counter the depersonalization: third-party consultation, feedback designs to build organizational structures and a culture for improved interaction, team-building, etc. If a training or development intervention is planned, a high percentage of IIs calls for learning about effective interaction and relationships. It also points to a need for learning the specific behaviors that will increase positive interaction among organization members. Because the phase assignment of members of work groups is so strongly affected by local management and conditions, a management development intervention may be needed to target the managers and supervisors of those groups with the high proportion of IIs. Such activities may include learning how to become more of a leader than a boss, listening and feedback skills, treating people like people instead of parts of a machine, and redesigning the work and coordination of group and organization members to facilitate better connection and cohesion.

If a high proportion of IIIs are found, job enrichment may be in order, along with a supportive organizational structure, practices, and systems. Again, this is an intervention that we know can usually work (e.g., Alber, 1978). The same argument can be made for IVs. For training and development interventions, learning objectives may include how to improve and implement reward systems, understanding and explaining the value of the work people are doing, and cross-training on different jobs in work units and the organization.

The same prescriptions used for IIs, IIIs, and IVs do not seem as appropriate, however, for VIs, VIIs, and VIIIs. Those in the advanced phases of burnout are more likely to lack the emotional resources and probably the skills essential for a high-stimulus intervention (Golembiewski & Kim, 1989; Golembiewski & Munzenrider, 1991a) because they are already at or beyond their abilities to cope comfortably. High-stimulus interventions would run the risk of overstimulating VIs, VIIs, and VIIIs to a point beyond that permitted by good conscience and ethics, and even possibly to the point of physical or psychological illness. Initial low-stimulus interventions, such as time off, job sharing or job rotation, increased work environment flexibility and autonomy, and performance technology and interpersonal skills learning opportunities are appropriate. Interventions typically include defusing emotional tension, increasing self-esteem, and improving their sense of efficacy. Learner self-efficacy (Mager, 1992) becomes a critical issue for these people because they are so close to being overloaded already. Training and development interventions must be designed to help decrease the stressors causing the burnout in the target audience. These may be followed by high-stimulus interventions after burnout has been reduced (Golembiewski & Boss, 1992).

Using the MBI and phase model for diagnosis may have another more esoteric value. People in advanced burnout, perhaps because of their emotional exhaustion, do not seem as aware of their burnout condition as their comrades in the less-advanced phases. Also, these people may be unmotivated or unable to take action to change their conditions, without outside intervention. As evidence of this, a pilot study of volunteers for stress management workshops shows that most were in the least-advanced phases of burnout (Golembiewski & Boss, 1992).

Motivating Remedial Action. A second use of the MBI is to provide a measured basis for assessing the necessity for taking action to improve the lives of organizational members (Golembiewski, 1987). Administering the MBI may be the first step after contracting and entry into an organization. Managers typically want 0% VIIIs; they often guess they have no more than five-ten percent of the members in their organizations in phase VIII of burnout (Golembiewski, Munzenrider & Stevenson, 1986). Most people are somewhat aghast on learning the true extent of the phenomenon on average (20+%), and particularly disturbed at the levels of burnout in their own organizations. Organizations may be more willing to commit resources and effort to human resources development interventions when they have some believable, quantified measure of the levels of burnout in their organization and its seriousness, especially when the reality of the burnout differs so far from their estimate, and especially from their ideal (Golembiewski & Boss, 1992).

The use of diagnostics of stress and burnout is getting a boost from court decisions that encourage testing as evidence of good faith (e.g., Ivancevich, Matteson, & Richards, 1985). The ability to rapidly report MBI results can make the instrument a better choice for motivating change than many of the alternatives described in the organization development literature (e.g., Golembiewski & Hilles, 1979).

Measurement of Intervention Progress. Third, the MBI provides a reusable measure of burnout over time. This may be most useful as a yardstick on the success of organization development and change (Golembiewski & Boss, 1992), but can have other applications as well. In assessing change efforts, evidence continues to grow that shows that improvement in first-order changes, such as changes in the attitudes and behaviors of those directly involved in the change efforts, can be related to reducing the phase levels of burnout (Boss, 1989). There is also evidence of the relation of the burnout phases to second-order change, such as the character and style of broader relationships (e.g., Golembiewski, Hilles, & Daly, 1987). There have been no studies showing evidence of the relation of burnout phases to third-order change, such as differences in the performance levels of large organization systems (Golembiewski & Boss, 1992).

In general, no data on individuals is reported, only data on the aggregate. This anticipates a possible reaction of managers to burnout data: getting rid of the individuals who are obviously (based on high phase assignments) not satisfied with their jobs, feeling low job involvement, performing poorly, suffering physically and emotionally, and worn out. Such is the strong case for anonymity for respondents!

As time and activities have progressed in interventions, however, several approaches to using individual data have been tried, based on the perceived levels of trust and the availability of resources for individual remediation in the organization. One group, for example, reports aggregate data, but allows its members to call the external intervenor to discuss personal phase assignments, assess their relation to ongoing organizational dynamics, and to discuss possible ways of coping. At other times, the group has included disclosure of personal phase assignments as part of its planning for action, perhaps to reduce stressors for individuals (Golembiewski & Boss, 1992).

Taking Action to Reduce Burnout. Golembiewski & Boss (1992) suggest three priorities for burnout reduction initiatives.

First, keep Is-IIIs in the phases of least burnout. Table 5 shows that most people assigned to these phases will stay there.

Second, try to help IVs and Vs move to IIs or IIIs, then back to Is. The same ameliorative designs with high rates of success that are available to help IIs and IIIs can also be used to help IVs. Try to help Vs by providing social support interventions.

Third, for those in the advanced phases of burnout, gather more data to determine if the respondents are in "active" or "passive" mode, then differentiate interventions based on the mode. Mode divides how people respond to burnout. Golembiewski has used a norm based on his 1984(a) study with Munzenrider of a large population that responded to a standard scale measuring job involvement (White & Ruh, 1973). They divided respondents into two categories based on the median with those above designated "active," and those below designated "passive." Different interventions are needed because passives are perceived to be less amenable to reduction in burnout, even when change in that direction has been induced among most other participants in a typical high-stimulus design (Golembiewski, Hilles, & Daly, 1987).

"Actives," even though they may be in advanced phases of burnout, are still involved emotionally in the activities of their organization, which makes them a better target for intervention than passives (Golembiewski, Hilles, & Daly, 1987). Such interventions can include gathering and sharing data about operations, conditions, relationships, and culture; contracting with organizational stakeholders for improvements in those aspects of the organization; and working on changing the organization's structure, policy, and practices to institutionalize more effective interactions and other salient aspects of the operating environment (Golembiewski & Boss, 1992). In short, this describes the classic organization development design of changes in interactions and values leading to structural reorganization to attempt to make them permanent features of the organization (Golembiewski, Hilles, & Daly, 1987). The bad news is that the number of actives decreases with each subsequent phase, with 70% of those assigned to phase I being actives, and a like percentage of those assigned to phase VIII being passives (Golembiewski and Munzenrider, 1988).

This begs the question of what causes people to be active or passives. By knowing the cause(s), perhaps interventions can be devised to move the passives to actives. Unfortunately, the answer is unknown. It may be a function of personality characteristics such as hardiness or helplessness (e.g., Garber & Seligman, 1980) shaped by either nature or nurture. It may vary with culture. One Japanese population had a very large percentage of its respondents assigned to advanced phases, but most of the population is also active based on the norm described above (Boudreau & Golembiewski, 1990; Golembiewski & Boudreau, 1989). Also not known is whether, and how long, people remain active before becoming passive in advanced phases of burnout. Freudenberger (1980) believes the period is short.

To date, only populations with 10% or less of passives have been intervention targets. While no adverse effects were reported from the interventions, the passives remained in the same phases of burnout while marked improvements were observed in others (Golembiewski, Hilles, & Daly, 1987).

Environmental Aspects of the Phase Model. In contrast to the more popular emphasis of "company culture" as the dominant fact of organizational environment (e.g., Peters & Waterman, 1982), within-organization variability has long been shown to be a stronger influence (e.g., Shils & Janowitz, 1948; Lawrence & Lorsch, 1967). The key differentiator between individuals being in the phases of least burnout or phases of advanced burnout seems to be the work group of a respondent (Golembiewski, 1983; Rountree, 1984), what Golembiewski and Boss (1992) call the "groups of first-reports." Individual work groups tend to have their members in either the phases of least burnout or in the advanced phases of burnout, but rarely in both (Golembiewski & Boss, 1992).

Conceptually, the organizational structures, policies, procedures, management, and leadership, or the lack thereof, of each work group create a common environment for the group and exercise the greatest influence on its members. This explains the relative homogeneity of phases in a work group and the commonly wide diversity in phase assignments across the parent organization.

The influence of work groups is often discounted, however, as organizations seek "magic bullet" solutions to burnout. Many organizations attempt to "inoculate" their members against the affliction by sending them to public or company-wide stress management workshops, which try to help people protect against generalized inducements of burnout. (Recall that most of the attendees at such workshops are Is-IIIs.) The workshops have some success in helping people learn stress management. The failure of the workshops is that they ignore the participants' more immediate daily environmental stressors within their work groups (Golembiewski and Boss, 1992) and organizations. Even worse, they may armor members against such forces. This would be acceptable if assignments to stress management experiences were by work group, but that is rarely the case. Golembiewski and Boss (1992) suggest that the design of each stress management workshop be geared to the phase levels of the participants, so that (for example,) Is learn what they need to learn about preventing burnout, while VIIIs learn how to begin to alleviate their burnout. Clearly this action calls for a needs assessment for each target audience, which is rarely heard of for such workshops.

Specific Organization Features Associated with the Phases of Burnout. Table 6 shows organization features arrayed against the phases of least and advanced burnout. The table reflects covariants with the phases, but does not establish causality. The few studies that attempt to establish causal linkages via direct experimental design (e.g., Golembiewski, Hilles, & Daly, 1987) or via causal modeling (e.g., Rountree, Golembiewski, & Deckard, 1989) support the highs and lows shown in Table 6, but additional causal linkage studies are needed.

Table 6: Organization Features and the Phases

Organization features associated with less advanced phases	Organization features associated with most advanced phases
High participation in decisions at work	Low participation in decisions at work
High job involvement	Low job involvement
High satisfaction with most or all facets of work	Low satisfaction with most or all facets of work
High sense of psychological community: high cohesiveness of primary work group, high social and emotional support from supervisor and coworkers	Low sense of psychological community: low cohesiveness of primary work group, low social and emotional support from supervisor and coworkers
High trust in all levels	Low trust in all levels
High need satisfaction in job	Low need satisfaction in job
Low job tension	High job tension
High clarity about job requirements	Low clarity about job requirements
1-to-many or group-oriented supervision	1-to-1 supervision
High orientation to getting task done	Low shared orientation to getting task done
Low work pressure	High work pressure
Open interaction and cultures	Closed interaction and cultures

Note. From "Phases of Burnout in Diagnosis and Intervention: Individual Level of Analysis in Organization Development and Change," by R. T. Golembiewski and R. W. Boss, 1992, Research in Organizational Change and Development, 6, p. 145. Copyright 1992 by JAI Press, Inc.

Implications for Human Resource Development

The field of human resource development now has the phase model as an additional measurement tool to help its practitioners and researchers determine an important aspect of any organization at any moment, and repeatedly if desired. The phase model can provide data on which to base the suitability of an intervention, as well as its type, depth, organization and individual targets, and success over time. It provides data that allow the proposal of people-centered actions to improve organization function, rather than organization-centered or mechanistic actions. Research using the phase model has identified likely individual and organization symptoms and the potential costs to the organization for not intervening. These costs may motivate leaders to approve an HRD intervention because the burnout is very likely to appear to be much higher than desired in almost all mid-sized organizations or larger. The phase model aims at all three levelsof organization, individual, work group, and organization, where HRD can be effective. Finally, for practitioners, it can help explain why interventions not indicated by the data are not likely to work.

For HRD researchers, a new way of looking at organizations is available. Using the phase model as an inquiry tool may allow further and deeper scrutiny of conditions in organizations, and the effectiveness of improvement actions at any given time. There is still a vast opportunity to use this tool to examine consequences of work features, change, and the relationships among work elements.

Of additional great benefit to all users of the phase model is its low cost, speed of use, and richness of results. As shown above, there is much to commend the use of the phase model of burnout in human resource development.

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* This is the best and most complete work on the phase model of burnout. It includes a complete list of references.

Note. A complete list of references is available from the author.

lobal 100 Session: Linking HRD Practice and Research

arbara L. Swanson
wanson and Associates, Inc.

his session will provide an "action learning set" for all participants. The session will begin with lentification of current business and HRD imperatives. Then, participants will break into small groups to ork on selected imperatives. Discussion will include relevant research and theory and work that still needs be done. For each imperative, participants will brainstorm research questions and available resources. here appropriate, partnerships will be formed between Global 100 members who are looking for research nswers and scholars who are seeking research support.

Learning During Downsizing: Stories from the Survivors

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This study describes the types of independent learning activities undertaken by survivors of a downsizing in a Federal government agency. This study demonstrates that survivors of corporate downsizings do undertake learning activities and utilize many different resources to accomplish the learning tasks.. People, formal activities and books are described as the primary resources used, and participants report that the organization is only somewhat helpful in supporting the learning activity.

Introduction

It has been estimated that over 80% of on-the-job knowledge is acquired independently, and informally(Baskett Dixon and Churchmuch, 1994), and there is substantial evidence that employees engage in self-directed learning at the jobsite (Confessore and Confessore, 1993; Foucher and Tremblay, 1993; Marsick and Watkins, 1992). Basket and Dixon (1992) identify seven workplace characteristics that need to be accounted for when trying to understand the incidence of SDL in the workplace. These include having freedom, control and/or choice; awareness of self and others; and learning with and from others. Kops (1993), in a study of mid-level government managers, found consistent leadership, clear expectations by managers, and clear directions regarding the mission and vision of the organization as important environmental contributors to incidence of SDL at the worksite. Confessore and Confessore (1993) found that characteristics such as openness to alternatives, creativity, flexibility and a willingness to take risks, and a sense of personal efficacy were important contributors to SDL in the work environment.

Context is a key factor as to whether SDL will occur in the workplace. Ravid (1987) notes "self-directed learning does not take place in a vacuum. The character of an organization's internal work environment has long be recognized as influential" (p.5). Baskett, Dixon and Churchmuch (1994) believe that organizational culture affects the incidence of self-directed learning, chiefly because the shared values and norms contained within the culture impact individual actions, including what the individual is allowed to do. Organizations that have experienced a downsizing are described as highly chaotic environments where leadership is often in transition, organizational goals are not clear or may be conflicting, and individuals who have continued employment during and after a downsizing report feelings of sadness, a sense of betrayal, depression and even guilt (Brockner, 1992, 1985; Clark and Koonce, 1995; Noer, 1993). Self-directed learning is seen as an integral part of an organization's knowledge base, yet it is unclear what the impact of a downsizing may be on the incidence and subsequent knowledge acquisition behaviors of individuals in a post-downsized environment.

Survivors of corporate downsizings report undertaking significantly fewer self-directed learning projects and have significantly lower persistence scores for completing self-initiated learning projects than a comparison population (Confessore and Bonner, 1996). However, Fox, Mazmanian and Putnam (1989) found that individuals engage in self-directed learning activities as part of stressful, even traumatic events. This seeming contradiction raises issues for HRD professionals as they seek to understand how individual are acquiring the knowledge they need to accomplish new tasks in new situations, and maintain productivity. This study investigates the self-directed learning activities of survivors of a downsizing in an attempt to answer 3 questions: (1) do survivors of a downsizing report self-directed learning activities, and if so, what is the

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nature of these activities? (2) How do survivors describe the workplace environment, and its relationship to any learning which took place?; (3) what role, if any, do formal learning/training activities play during the transition period of the downsizing?

The Setting for the Study

This study was conducted at a Federal government agency that had begun the downsizing process nearly one year prior to the collection of data. A restructuring of the organization occurred as part of the downsizing, and at the end of the "first round" of downsizing, the organization had gone from 5 operating units to 4, with 3 units maintaining essentially the same work tasks. The fourth unit was assigned completely different tasks. There was substantial re-assignment of employees. Many experienced a change of supervisor and dramatic changes in job assignments. In some cases, employees were required to take demotions. The unit participating in this study is heavily involved in high technology work, with some satellite communication. This unit maintained its organizational mission, although some members of this group were newly assigned.

The unit had been through three waves of downsizing. These interviews were conducted 11 months after the announcement of the downsizing and restructuring, and four months after the first RIF list was posted. It was generally believed that the organization would experience at least one more downsizing event within the next six months.

Subjects and Data Collection

Thirty-two individuals who had a government service (GS) level of 11 through 15 volunteered to participate in the study. This categorization was selected because it constitutes the middle managers within the government employment structure. The individuals participated in an interview and completed two instruments, the Learning Profile Questionnaire (LPQ) and a survey instrument designed to measure locus of control. This study reports the results from the interview data.

The study used a semi-structured interview format, consisting of a series of questions modified from the Fox, Mazmanian and Putnam study of physicians' learning and change (1989). Individuals were asked to discuss the changes that had occurred as a result of the downsizing; describe the information or new skills they attempted to obtain as a result of the changes; whether the organization helped them through the learning process; and finally, if they used formal educational activities when seeking information about how to accomplish the changes they had identified. In addition, participants were asked for various demographic information, including age, length of service with the organization, educational level, and information about the various positions the individual had held within the organization.

Interviews lasted approximately one hour, and took place at the organization. As a result of reorganization activities of the previous months, approximately half of the participants were changing offices during the weeks of interviewing, creating substantial chaos. As a result, approximately half of the interviews took place in the subject's office, while the remainder took place where ever an empty, quiet place could be found. Inteviews were audio taped and transcribed. Transcripts were subjected to a content analysis across three areas of focus: (1) the changes that occurred and the attitudes of the participants as a result of the changes; (2) the learning activities undertaken as a result of the downsizing and restructuring; and (3) the participants' perception of organizational support for their learning activities.

Results

Demographics. The population for this study are typical middle level civil servants. The mean age is 48, and the population is male and Caucasian. This group, due to the mission of the agency is highly educated, with over 85 percent possessing the Master's degree, the majority in engineering. On average, the individuals have been employed for 16 years, having held 3 positions with the agency. The average length of time in the current position is 3 years, with the largest number of participants (12) reporting less than one year in the current position. While over two-thirds of the participants had been in their current position 3 years or less, which is not uncommon in a Federal agency, the large number of participants who had been in their current position is noteworthy, and reflects the significant numbers of individuals who experienced changing job responsibilities as a result of the downsizing and subsequent re-structuring.

Changes Reported. The changes reported by the participants were all work-focused. Some participants were given completely new job assignments, while others reported that the department's size had been reduced. Participants in this situation reported little change in their job tasks, but reported taking on bigger work-loads.

The participants who had new job assignments described their duties and the restructuring/downsizing in more positive terms than did the individuals who retained their assignments, but experienced decrease in their units. For example, one individual reported that he had lost his supervisory position, but was assigned to work that he found much more satisfying, and felt the changes in work were very positive. As one individual noted: "Under the new regime, I guess I am allowed to manage my division where I see appropriate, and where I deem necessary. So I find it refreshing, with an increase in authority and ability to get things done." Another said: "There was no longer an interest to me (where he was), although I think it was a very important work and it still continues to be. It became very routine and so I'm not al all unhappy moving out of that work. I'm able to move into some areas that challenge me more and I'm happy for that." In contrast, another pointed out: "My job hasn't really changed, but my duties and responsibilities are widening. I have taken over the job that was originally handled by three gentlemen, so the workloads have gone up astronomically. I can assure you, we are not having a whole lot of fun here."

Several of the participants noted the loss of talent and the "dumbsizing" that had occurred. "We still have a lot of work to do with a lot less people. We lost a lot of really good, sharp, people" and "We lost a lot of experience" are characteristic quotes. One manager noted, "Its hard to talk to people about planning projects when they're more concerned about whether they will have a job in a month. We lost a number of young, highly productive engineers". A related topic focused on the fact that individuals had become distracted from their job tasks because they were either looking for other work to "get out ahead of the next cut," or because there was so much energy being expended on the stress of the changes. As one participant said:

> It's more like I have to vie for myself, because I need to feed my family. You can understand both ways, but yet, we are all the survivors of it so far. You know, I might not be a survivor next time, so that you have those stresses. People are vying for their positions because they know another one is coming, instead of saying here are the survivors, we need to really get together as a team and try to make the most out of this, and they are not doing that. They're putting up walls instead and we are not going to deal on a level of cooperation. I have to tend to myself. It's a survival instinct.

Other individuals felt that the downsizing and restructuring was good for both the organization and their careers. Several of these individuals noted increased responsibility, the ability to get interesting assignments. One manager spoke about his junior engineers, and how upbeat they were. He noted there had not been a "negative atmosphere at all," and then added that the positive environment might be due to the fact that they were getting large amounts of new equipment, and interesting new assignments. He also felt the positive attitude might be related to the new skills they were learning, skills that made them very marketable outside of the agency. Several of the more senior personnel talked about the changes almost clinically. They described how interested they were in the process of the re-structuring, "how the components might be affected," while others described the reasons and justifications for the downsizing. It should be noted that individuals who tended to be most objective or positive about the changes were also the more senior members of the organization; those with the least likelihood of being asked to leave the organization.

Learning Activities. The participants reported completing, on average, between 4 and 5 learning projects over the past year. While this number is well below the 7 often reported for the general population, it does demonstrate that SDL occurred. Survivors described initiating learning projects to learn new job tasks, to balance remnants of old job responsibilities with new responsibilities, or to obtain information that would make them marketable "on the outside." Taken together, participants described an environment where learning occurred almost as a matter of survival, as the primary means to obtain the information necessary to meet the new challenges.

Participants in the study identified eight different types of learning resources, with most people identifying use of more than one resource. The most frequently cited resource was people. "People" was defined as individuals within the organization who participants indicated they had sought out for information, usually as a result of being given a new assignment. The most frequently cited people resources included superiors, intra- and inter-departmental colleagues, and work groups. Other resources included books (20), formal learning activities, such as conferences and training classes, and continuous learning (both 15). Continuous learning is defined as statements where individuals described themselves as independent learners, or people who are always learning. The remaining resources include life experience (11), technology (6) and outside groups, such as professional organizations, (5).

A large number of the learning projects involved working informally with people to obtain the information they needed to complete their new work assignments. Participants in the study described several different mechanisms for interacting with people. Some reported relying on their knowledge of the organization, and their experience to determine who to call on for assistance. "I asked people that I thought would have it (information). (I would go to sources) that I already knew could possibly have this contract…I guess in my couple years on this side of the hall, I've learned who has these bits of information." Other participants talked about informal groups and meetings that served as a resource and also provided leads for obtaining information elsewhere in the agency. There were different levels of formal structure to the groups, for example, one person described a coffee klatch that got together each morning just to sit around and talk about things and "come up with ideas," while others talked about the learning they acquired as part of formal meetings. Colleagues, office mates and, interestingly, individuals who had previously held the job proved to be very helpful resources: "I've talked to people who used to…who set up the new system, the system I am now responsible for." Or, as one other individual noted: "The person in the previous position would give me some stuff. I'd take it back and work with it, then think about it and say hey, what about this, what about this? I'd see him again and pick up some more information. Sometimes I'd give him some information."

Many of the participants listed books or technical manuals as learning resources. Many of these came through the organization, but a number of people indicated that they spent "their own time" reading. "I'd rather read and look up the stuff myself. We get magazines here. And some of the guys are members so I pick up their manuals and look at them." "If you go to Borders or Crown (local bookstores), I go in those every once in awhile. I just sit there and look and see what kind of books they have. They're in all different areas, you can be selective in whatever area you're looking into."

Formal learning activities, classes, conferences, and seminars were also popular resources. Individuals described attendance at classes as being the most efficient means of obtaining information. Of all of these sources, individuals reported attendance at classes more frequently than any other activities. Many had completed management courses offered through the government, while others reported that they had completed courses in areas related to their work, such as engineering, at local universities. Several had attended conferences, either sponsored by the Government, professional organizations, or by equipment manufacturers (especially software companies) although many noted that funds to go off-site to train had been substantially reduced as a result of the downsizing.

Some individuals described the environment as being so rich with opportunities that they ‘just learned what they needed to know.” Closely related to this concept were the comments of several individuals who noted that they ‘learned it on my own.” These participants described themselves as people who are “always trying to learn…whether I'm told I need to do it or not. I'm always looking for better ways of doing things.” Also related to this idea of a rich environment is the role that experience played in the learning. Many of the participants talked about how they came to their new jobs with related experience, and were able to apply that to the new situation. These participants tended to describe the effect of the experience as providing a base of potential options, that made it easier for them to make decisions about the most appropriate action in an unfamiliar situation. ‘I'm starting from knowledge, and so I can expand on that and that saves time because I've been here for a long time, I don't have to constantly go seek out who is expert in what or who has the knowledge.” Another participant: ‘Doing the job, just getting involved in the different aspects of project…” and finally: “…the next trip they're planning on, I am planning to go with them. So I think that's when I will start learning more about what they do, physically do, and learn some hands-on training.” In each of these cases, individuals identify different types of experience which contribute to their knowledge base to accomplish their new job assignments.

There were notable differences between individuals who identified themselves as relying on people as a primary resource and those who favored structured learning activities. Generally, those individuals who identified people as important resources described themselves as ‘independent learners” who felt the structured learning activities were a waste of time because they were not specific enough to meet their highly specialized learning needs. Further, these participants also tended to list multiple resources such as people, books, technology and continuous learning opportunities as being all important to their learning. However, individuals who cited structured learning activities tended to identify many fewer additional resources, and, when they did, described them more as second choices.

Regardless of the differences between their learning preferences, it was obvious that individuals were engaged in learning activities. Further, there did not seem to be any relationship between the individual's attitude toward downsizing and the number of learning activities they described. Even the individual who reported ‘the worse thing is that I wish I could quit. I wish I could walk out and never come back.” described learning activities that were highly individualized, and told about accessing several different resources that he could accomplish his job tasks.

Support for Learning Activities. This assertion is contradicted somewhat by the participants descriptions of organizational support for their learning activities. While some noted that the organization did not hinder their efforts, almost the same number noted that the best the organization was able to do was to was to not interfere. Many participants felt that resources had been cut back, and noted that some of the ‘one and two week seminars” had been cut. Others were more caustic in their description of the lack of support:

> No one makes it easy. You have to do this for yourself. You have to learn about these conferences, you have to apply for it, you have to follow though…So it takes some personal initiative to make sure it actually happens. I don't think they are inhibiting. They may not be making it easy, they are not encouraging people.

One program, contracted by the agency to provide support for the individuals early in the downsizing effort was universally panned. The program was seen as wasteful and demeaning, and many felt that the group that had provided the training talked down to the group and treated them like they had not understanding of the impact of the downsizing. This was the only effort described as being organization-wide, and the only program which received universally poor reviews.

Another area where individuals noted lack of support was in access to the internet. While some participants had access at the jobsite, there were others who were not "qualified" to have it. Individuals described a policy where only people whose job description required work on the internet could have access to it. It was unclear as to what the standards for access were, but it was obvious that several participants felt that, while access was not absolutely necessary for the accomplishment of their job tasks, the ability to connect with others and access the resources represented by the internet would enhance their knowledge base and subsequent ability to do their jobs. A few of these individuals noted that they had "purchased" their own access on their home computer, and did use the resources as part of their learning activities.

There did not seem to be any relationship between attitude toward downsizing and perception of support for learning activities. Some individuals described the downsizing in positive terms, and noted they believed there were still learning opportunities being provided. Others who described the downsizing in negative terms also reported that the agency had failed to provide opportunities for learning. While some individuals reported the positive/positive or negative/negative relationship, there were a sufficient number of individuals whose attitude toward the downsizing was negative who reported support for their learning, as well as individuals who reported positive feelings toward the downsizing, while describing no support for the learning activities.

Summary of Findings. Individuals who have participated in a downsizing event within their organization describe an environment that is rich with individual learning activities. All participants identified learning activities, and resources to support them. The nature of these activities included highly individualized activities such as on-the job experience and reading books, to more structured and formal classes and conferences. The environment is described as somewhat supportive, although these findings are not clear. What does emerge is that there is no clear relationship between the attitude of the individual toward the downsizing and their perception of support for learning activities. Finally, it appears that while formal training and learning activities play some part in the learning activities during a downsizing, much more learning occurs as a result of informal interactions, primarily interaction with other people.

Conclusions and Recommendations

This study confirms the findings of Fox, Mazmanian and Putnam (1989), who found that individuals do utilize independent learning activities during times of high stress. Further, these findings are consistent with those individuals who report high incidence of independent learning activities at the work site, but adds to this body of literature by describing individuals who are employed in often stressful, very chaotic environments. This study also provides guidance to HRD professionals as they address the needs of individuals who remain with an organization after a downsizing event has occurred, for it demonstrates that self-directed learning does occur, and suggests some practices to enhance independent learning activities.

The individuals in this study reported using many different resources, but the extensive reliance on "people resources" is key. In previous work (Confessore and Bonner, 1996), it was determined that individuals involved in a downsizing also reported decreased persistence and resourcefulness in completing learning projects. One of the speculations was that the "learning network" established by these individuals was broken as a result of the leaving of colleagues, making it difficult to obtain information necessary to do the job from the usual resources. While several individuals talked about losing talent and knowledge sources, many others demonstrated surprisingly proficiency at determining where the knowledge sources currently resided, and accessing them to learn how to get their new jobs done.

While this tends to dis-confirm the prior speculation, the fact that the union had strong influence in this downsizing must be accounted for when analyzing these results. Determination of who was to be RIF'ed was done primarily by seniority. Thus, the individuals most likely to remain with the organization were those who had known each other the longest, and who had established very strong relationships over a large number of years. This circumstance may have contributed to the willingness of individuals to go across the organization to seek information; it may also suggest that, should more RIF's come, and the longer-term employees are dismissed, the learning resources, and, subsequently, activities may be greatly diminished.

The finding that the organization is not supportive of learning activities is not surprising, given the literature on survivors of downsizing, but it is intriguing in that it provides evidence that descriptions of survivors as unable or unwilling to be proactive in their worklife may be too extreme. These individuals demonstrated seemingly healthy knowledge seeking behaviors, and even those who expressed frustration and low morale were able to attribute some support to the organization. Furthermore, the lack of a clear pattern of low morale, no learning activities or reduced learning resources also disconfirms the description of these individuals as clinically depressed and unable to learn, as characterized by Noer (1990) and Downs (1995). For the HRD professional, it suggests that if the organization wants to begin to rebuild morale, it must organize formal learning events and provide mechanisms to support the vast amount of independent learning that is occurring within the organization.

Recommendations for Further Study

These findings are based on a very small sample size of Federal governement employees. It is recommended that the work continue and address the following questions:

a) Do survivors in the private sector display similar characteristics?
b) Data for this study was collected soon after the first individuals left the organization. So long term survivors demonstrate these same knowledge-seeking behaviors, or does it diminish over time?
c) The population base of survivors should be expanded to improve generalizability.

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Organizational Career Planning & Development: Changes and Trends in Practice

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The purpose of this research was to determine current organizational career planning and placement practices in the greater Cincinnati, Ohio area and to compare and contrast results with a 1990 survey of large organizations. Results which review major similarities and differences in the two groups' practices, as well as projected trends in this field, are discussed.

In the past, many career planning and development practices have fallen upon the shoulders of managers in organizations. As downsizing and re-engineering efforts have reduced the ranks of middle managers who often performed these duties, and as organizations are called upon to do more with less, the question that arises is whether organizations are instituting and/or continuing programs that allow employees to take greater responsibility for their own career management efforts, or whether career planning and development programs are themselves being reduced in number and scope.

Funded by the Greater Cincinnati Chapter of the Society for Human Resource Management, this research was designed to determine current career planning and development practices in the greater Cincinnati, Ohio area, and to compare and contrast results with a 1990 national survey conducted in cooperation with the American Society for Training & Development and reported in the 1993 book *Organizational Career Development: Benchmarks for Building a World-Class Workforce* by Gutteridge, Leibowitz and Shore. The major questions informing this research included:

- Are companies in the greater Cincinnati area similar in organizational career planning and development practices to large companies as reported in *Organizational Career Development: Benchmarks for Building a World-Class Workforce*?
- What factors are influencing the initiation, continuation or discontinuance of organizational career development?
- What trends are being forecast for organizational career development in the greater Cincinnati area?

Methodology

A 13-page survey, which was adapted from the one reported in *Organizational Career Development: Benchmarks for Building a World-Class Workforce*, was sent in November 1995 to 630 individuals who were members of the Greater Cincinnati Human Resource Association (local chapter of the Society for Human Resource Management) and the Greater Cincinnati American Society for Training & Development (local chapter of the American Society for Training & Development). Individuals who were members of both associations only received one survey; and individual consultants and people whose organization was already receiving a survey through another individual were eliminated from the pool. Reminder letters were sent two weeks later to all individuals. One hundred twenty individuals responded to the survey. Responses were analyzed using Statistical Package for the Social Sciences Release 4.1.

Results

Demographics of the respondents, as compared to the results from the 1990 survey, are listed in Table 1.

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Table 1
Comparisons between 1995 and 1990 respondents

	1995 Survey n=120	1990 Survey n=1,000
Type of organization		
Mfrg. (consumer)	13.4%	7.5%
Mfrg. (industrial)	21.8%	22.9%
Retail/wholesale	10.1%	4.7%
Banking, finance, ins., real estate	11.8%	24.5%
Energy (pub. util., petroleum, chemicals)	.8%	18.6%
Education/non-profit	1.7%	.4%
Government/military	3.4%	.4%
Services (bus. serv., food & hospitality, recreation, repairs)	7.6%	4.0%
Medical/health care	11.8%	2.0%
Diversified/conglomerate	0	4.3%
High tech	2.5%	5.1%
Other	14.3%	5.5%
Organization's budget		
Under $25M	41.2%	2.9%
$25-49M	11.9%	1.3%
$50-99M	20.1%	2.9%
Over $100	26.6%	92.9%
Number of employees in organization		
Fewer than 500	57.5%	4.3%
500-999	20.8%	7.1%
1,000-4,999	11.7%	35.3%
5,000-9,999	6.7%	18.0%
10,000 or more	3.3%	35.3%

As evident in Table 1, the current research's respondents are from organizations considerably more diverse in function but much smaller in budget and number of employees than the 1990 research. Their organizations' frequency and type of career development practices, therefore, reflect this much smaller size.

Of the 120 respondents to the 1995 survey, 56.9% either had or were starting an organizational career development system (OCD), defined as "a system of processes and practices designed to link an individual employee's career goals with the organization's current or future human resource needs"; 42.2% did not have one, and only .9% had one but discontinued it. This is in contrast to the 67.5% of the 1990 respondents who had an OCD or were starting one, although 30.9% did not have one, and 1.6% had discontinued theirs. Twenty-two percent of the 1995 respondents who either did not have one or discontinued it indicated that insufficient budgetary resources were their reasons, while 24% noted that insufficient support by top executives was a strong reason for not continuing or implementing an OCD. These were also the top two reasons noted by the 1990 respondents.

Table 2 shows a comparison between the surveys on various components of the OCD systems.

Table 2
Comparisons between 1995 and 1990 OCD systems

	1995 Survey n=66	1990 Survey n=165
Length of time OCD has been in place		
Less than 1 year	30.3%	25.5%
One to two years	24.2%	20.6%
Three to four years	13.6%	16.4%
Five to six years	1.5%	12.7%
More than six years	30.3%	24.8%
Responsibility for OCD		
Centralized	29.0%	37.5%
Decentralized	17.4%	10.2%
Both	53.6%	52.3%
HR staff working full-time on OCD		
None	66.7%	54.1%
One	18.1%	21.0%
Two	2.8%	9.4%
Three or four	9.7%	5.5%
Five or more	2.8%	9.9%
FTE HR staff working on OCD		
None	46.1%	NA
One	23.7%	NA
Two	11.8%	NA
Three or four	11.8%	NA
Five or more	6.6%	NA

Surprisingly, results from both surveys were similar in the top factors that influenced the development of their organization's career development and planning system: Desire to develop or promote from within was the #1 factor for both sets of respondents (14.5% for 1995 survey, 23.0% for 1990), while development of the organization's strategic plan was #2 for 1995 (12.6%) and #4 for 1990 (12.1%). The other two factors were shortage of promotable talent (11.6% for 1995 and 13.8% for 1990), and organizational commitment to career development (11.4% for 1995 and 12.6% for 1990). Two factors that were expected to be higher in the rankings were desire to motivate employees under conditions of limited organizational growth (#9 at 5.9% for 1995 and #5 at 8.0% for 1990), as well as desire to improve worker productivity (#6 at 9.3% for 1995 and #13 at 1.7% for 1990).

Table 3 shows selected career development practices and their frequency in both the 1995 and 1990 surveys.

Table 3
Career development and planning practices' frequency

	1995 Survey n=66	1990 Survey n=165
Career planning workshops	23.0%	34.3%
Promotability forecasts	31.5%	45,7%
Psychological testing	30.6%	33.7%
Assessment centers	14.1%	14.0%
Career information handbooks	12.2%	18.9%
Career resource center	6.9%	19.5%
Supervisor or line mgr. counseling/career discussions	79.5%	83.0%
Personnel/HR staff counseling/career discussions	71.6%	82.5%
Job posting	82.7%	83.1%
Skills inventories/audits	38.9%	36.9%
Replacement or succession planning	51.4%	65.3%
Internal placement systems	40.6%	55.5%
Job enrichment/job redesign	44.4%	40.6%
Job rotation	37.7%	54.0%
In-house training & development programs	86.7%	91.6%
External seminars or workshops	81.3%	91.0%
Tuition reimbursement	88.3%	95.0%
On-the-job training	96.1%	NA
Cross-functional team training	60.0%	NA
Supervisor training in career discussions	37.0%	44.1%
Mentoring systems	37.5%	20.9%
Employee orientation programs	85.1%	86.1%

As seen above, the more traditional practices such as job posting, in-house and external training, tuition reimbursement, employee orientation, and supervisor or line manager or human resource staff counseling/career discussions continue to be the most prevalent activities in organizational career development systems.

Not surprisingly, both surveys found that little formal evaluation of career development systems or practices occur; only 15% of the 1995 respondents use questionnaires to measure attitudes, learning or behavior, while 32.7% of the 1990 survey respondents utilized this method of evaluation. Informal feedback from participants continue to be the most widely used method of evaluation, with 41.7% of the 1995 respondents and 63.7% of the 1990 respondents gathering data this way. However, 10% of the 1995 and 11.7% of the 1990 respondents analyzed data on productivity, performance and costs to evaluate their career development practices. Given the low staffing levels in career development, especially in smaller organizations, these figures could be considered a healthy trend toward more "bottom-line" evaluation.

Along with evaluation practices, much attention has been focused in recent years toward understanding and promoting linkages between the various human resource systems in organizations. Questions regarding whether selected human resource systems are part of an organization's practices and whether they are linked to career development yielded the following results in Table 4.

Table 4
Selected human resource systems frequency and linkages to career development

	Have system		Linked to career development	
	1995 n=66	1990 n=178	1995 n=66	1990 n=178
Performance appraisal	97.4%	97.2%	74.7%	82.9%
Recruitment practices	82.1%	97.8%	46.0%	49.2%
Promotion & transfer practices	84.6%	99.5%	80.9%	82.6%
Job description or evaluation	89.7%	97.3%	58.6%	48.6%
Human resource planning	75.3%	75.6%	61.5%	70.0%
Training & dev. systems	84.4%	NA	83.3%	NA
Org'l strategic planning	73.1%	84.8%	55.6%	46.5%
Individual development planning	66.7%	NA	80.6%	NA
Formal mentoring programs	20.5%	NA	27.0%	NA
Mgt./technical career tracks	43.4%	NA	56.0%	44.0%
Cross-training	64.9%	NA	62.7%	NA

Although the differences in size of organization between the 1995 and 1990 surveys would lead one to expect differences in the types of systems they possess and how the systems interact with career development, Table 4 shows very similar results between the two groups.

Discussion

Even though many large and small organizations have or are undergoing major changes in their workforce and in their style of operations (49.2% of the 1995 respondents' organizations have had layoffs in the past five years and 78.2% of them have undergone re-organization in the past five years), their career development practices seem to be in line with the 1990 survey of large organizations. If, as Mark Twain felt, Cincinnati is about 5 years behind the rest of the nation, perhaps this similarity with national large organizations can be explained as "catch up," or perhaps it is an indication that smaller organizations such as those reflected in the 1995 survey are becoming more proactive in their approach to career development for their employees and organizations.

Interestingly, responses to the question regarding the 1995 organizations' plans for career development practices centered around creating more formal and structured systems for training, mentoring, succession planning and integration with other human resource systems. A number of respondents indicated that if they had to design their system over again, concentrating their efforts and being sure that they were tied directly into other human resource systems would be some of their top revisions. Consistent with the need for human resource departments in general to align themselves more with the business of their companies, this research would indicate that career development staff need to be more aggressive in partnering with other functions in their organizations, as well as developing a more enhanced strategic focus to their plans and activities.

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Employee Strategies and Corporate Development - Consensus without Conflict?

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Will new HRM strategies for learning organisations,less hieracy and bureaucracy, and more emphasise on the knowledge base of the company mean a "natural enrollment" of the individuals' needs and strategies for better work - or will conflicts between management and employees arise at a higher level ? Based on research between technicians and other white collar workers in Danish companies this paper tries to understand current development in theworkplace from the employee's point of view.

The Danish labour market has a long tradition of a very widespread use of postgraduate and continuous vocational training in companies. This tradition is based upon at least four elements in the structure of the Danish labour market. In a very summarized form we could describe it like this: Danish management has a comparatively "soft" understanding of HRM build on - among other things - the fact that Danish companies are small and historical very "patronical". In recent years the business schools have been involved in the development and distribution of many new tools for planning training and education, in change projects based on notions like the learning organization, etc.

Danish trade unions have a long tradition for seeing education and training as one of their primary tools for securing their members in the workplace and to secure better wages. The traditional division between skilled and unskilled workers has clearly proved that education is a mayor factor when it comes to possibilities in working life regarding wages, job security, etc.

Politically the field of continuing vocational training and postgraduate education has been a cornerstone in the social partnership between employers trade unions and the (historically very often socialdemokratic) state. This has resulted in a very huge public funding of continuing vocational training and postgraduate education. - and this has been a growing sector over the last decade or so.

Finally education has always been a key element in overall political development in Denmark. Due to the lack of natural resources there has been a general understanding among all political parties that education has to be central to Danish economic development.

All this ends in a situation where there is a very broad acceptance of the necessity of workplace development, of enough public funding and general agreement between unions and managers about the use of training and education. Nevertheless, in the companies still more managers and employees ask:

If continuous vocational training is the answer - what was the question? Employees don't fell that their lives are getting that much better due to the training activities and the company doesn't get the increase in productivity it were looking forward to. This paper tries to give some parts of the answer to the question: Why are there still all the troubles with human resource development - even when the setting (that means: management acceptance, lots of money, agreements, etc.) seems ok? I will summarize some answers that my research has come up with - and that are answers mainly concerned with how the employees experience development processes, how they react and how that influences the process and the result.

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Theoretical Approaches to Understanding Contemporary Human Resource Development

The theoretical foundation of the HRD field draws upon several disciplines with organizational development (OD) and Training and development as major components (Swansson 1995). In this project there has been an attempt to go into a deeper discussion in three specific areas of the theoretical complex that is the HRD basis. It's theoretical concepts that go across the classical distinctions between for instance "organisation - groups - individual" and "organisation - process - individual".

Organization as a framework for HRD. There are several cdmpeting theories about OD - with more or less interest for The HRD field. I have aimed this project at providing tools for the cooperation in companies between management and employees (see Vind 1995a) and therefore it has been a priority to find theories that could grasp this process of daily cooperation, bargaining and negotiation in the broadest sense.

This has lead to the view of organizations as micro-political arenas where different agents carry their different strategies and opinions forward. In a German study they have structured this by Giddens theory of structuration (Giddens 1984) and applied it to company relations in this model:

	Analytical search dimension/structural level **Domination**			
Structure	Signification	Legitimation	Domination	
The form of Rules and Resources	Rules of the constitution of mind	Rules of sanctions of action	Authoritative-administrative resources	Allocative resources

Modality	Interpretative scheme	Norm	Authoritative-administrative power	Economic and technical power
Exemplas of modalities	Interpretation patterns Organisational language Ideals	Juridical norms Organizational norms	Work organisation Administration Instruments for planning	Money Investment budgets Raw materials Technics

Dimensions of micropolitical action	Communicative action	Sanctions action	Authoritative Administrative action	Business economy and technical action
	Analytical search dimension/level of actions **Power/Micropolitics**			

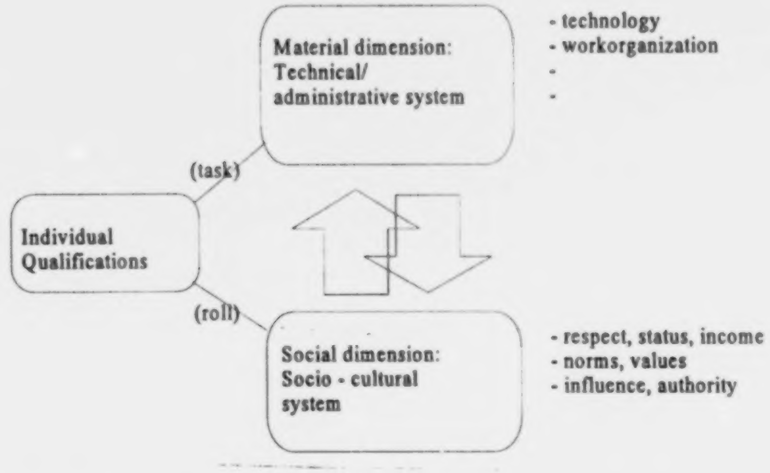
(modified from Ortmann 1995)

This model is used for analytical distinction of different areas of interaction/communication between the actors in the company setting and the different types of logic within this areas. To some extend this model can be clarifying to the terms of power and power relations as mayor factors in modern labour relations in the workplace (Jermier, Knights and Nord 1994).

HRD Strategy: Development of new qualifications. The second area of HRD theories has to do with the training and learning component of HRD. As a basis of designing training and learning programs there has to be developed a clear link between organizational development, the demands for new qualifications and the design of the learning processes.

Over the last decade there has been an increasing understanding of the very complex nature of the changes in the demands for new qualifications. Very deterministic or mechanistic points of view where people try to make forecasts about future qualifications based on f.i. the development within technology. This has proved to be inefficient in this regard.

There are of course very big differences whether you look into a specific company and it's specific development or if you want to look at qualifications on an aggregated level within specific sectors or the like. But fundamentally some of the difficulties arise from the complex of both a material side and a socio-cultural side of the qualifications:



(modified model from Soderstrom 1996)

Furthermore - when we have an idea of how new demands for qualification arise - there are three possible strategies for companies:
1) they can try to minimize the demands for qualifications (automatisation, etc.),
2) they can recruit new personnel from the external labour market and
3) they can go for internal qualification of the existing employees.
Due to a variety of circumstances (technology development, demographics, etc.) the most common strategy - also in the case companies in this study - the third str.ategy (Pawlowsky, 1992).

Individuals as human resources. I think that we never must forget that the individual employee is the subject in the learning process in organizations - and not only the object for the purposes of the organization. In this field it's a discussion about how to understand the relations between qualifications, individual competency and learning organisations, and between human resource management and individual strategies of the employees.

The question of-the subject - and subjectivity - and the relation between subject and the social settings draws upon a long history of theoretical controversies and different approached within several academic fields. (Casey 1995) The fundamental points of view in this study could be put into three short statements:

- the subjectivity will always be realised and developed through social interaction and be influenced by/influence this social settings
- the subjects response and actions in specific settings will be based not only on the actual situation in the specific context but will also be based on the individual biography - the specific psychological structure given by the specific development of that individual (Salling Olesen 1996).
- a central aspect of the constitution of subjectivity in an organizational setting will be the definition and the use of symbols and symbolic interaction.

How can we do Research on these three aspects of current HRD Practices in Companies?

The projects has included an attempt to operationalise these theoretical issues into a structure that could give answers at an empirical level. This has lead to a quite simple basic structure - divided into four separate "layers" in the case companies:

General developments which the company has to respond to. There is a wide range of external factors that defines the room for company decisions. These factors are within the whole spectre of company relations with the environment - market development, technology, available workforce, training possibilities, etc.. To understand the internal, micropolitical world we have to have at least a generalized understanding of these relations between the company and its surroundings.

Management strategies towards the general and specific developments. Founded in the perception of the external developments as well as interpretation of internal factors management forms a strategy (the level of verbalisation or even consciousness of this strategy is not the main issue here) and takes action according to this strategy. It's off course a main research question to extract the structure or the "logic" (which actually very seldom is basically logic or rationalistic).

The actual forms of cooperation in the company. Managements strategy and action most often is the mayor structure (that is the meaning of management) of how the cooperation between management and employees are formed in the specific setting. The study of this cooperation comprises both formal structures within company HRM (incentives, wage structures, formal cooperation at different levels, etc.) and informal features (culture, myths, etc.).

In a little more specific formulation it means: How do different personal/employee strategies emerge, develop and interfere with the organizations/management strategies? How are these change processes in the companies happening in practice? How do the different agents (management, employees, and partially some external agents (unions, etc.) behave?

Responses from the Employees In the HRD we have a broad knowledge of the reasons for the organizations to search for new capacities, new knowledge, new forms of organization, etc. and often also what types of management strategies that this is formed into - but we have very little knowledge about the structure and the content of the reasoning, reflexion by the individual employee and the "individual strategies" this is formed into (Heisig and Littek 1995). Why do employees act the way they do and what are the consequences?

Following this I find it interesting to see how these different strategies interact in the actual practice in the workplace - how can these strategies from management and from employees support each other, when do they become contradictory, etc.?

This has been the structure of the analyses of the cases study - which is conducted according to traditional case study methodology (see Vind 1995a). Even though the project isn't finished yet, we can look at some of the preliminary findings at the four different levels:

"We still knows what it's all about -so why make plans which management will change tomorrow?"

Divided into the above'described four levels I will in brief give some idea of what the findings in the project are. Bare in mind t~hat this project deals with only one part of the labour force - white-collar workers - especially technicians - within industry. The finding would in some aspect be different even in the same companies if we had looked at other grouping - or if we have looked into other businesssectors.

General developments which the company has to respond to. I won't go into details with this in this presentation, but the project has identified several general developments which hast to be taken into account wl~n you look at this specific groups of employees in Danish industry. In all the cases - and in the broader survey that was carried out - it was evident that for instance

Internationalisation, has become not only a question about new markets for products but a much more comprehensive feature, where many companies now are part of an international structure (as part of a larger concern, due to strategic alliances, etc.~. This means a much deeper cross-national cooperation at new levels in the companies, so technicians in planning, in requisition, etc. now has to be able to act in an international setting

Technology is still in the progress of creating new possibilities for cross-divisional information structures ia companies. This means for instance that economic aspects of product development can be/has to be taken into account also in the technical departments and this means new demands for economical understanding even by the technical staff.

Project management as a new way to organize work in the technical departments is a very widespread strategy and this also affects the demands for new general qualifications among technicians.

This is examples of areas where the white-collar workers - especially technicians - have to meet new and increasing demands for qualifications.

Management strategies towards the general and specific developments. Even though the individual company has to react to this general development in there own specific way, there are also some common trends in the actual management strategies in the studied companies:

A lack of continuity in top management strategies is a very common aspect. Due to the general turbulence -acquisitions, merger, new ownership, etc. - there is a big exchange of top-management in the companies - and also to some extend in middle management. This means that new ideas, new strategies are introduced in the organization with the effect that the different levels of management very often don't have the same strategy and that the organization as such can loose the engagement in the new ideas - "we've tried too much too often".

Too little knowledge and too much uncertainty about the outcome, the performance linked to different types of HRD-strategies contributes to the general unstable situation of the actual HRD-strategy in the companies.

The actual forms of cooperation in the company. The above mentioned problems for management in regard to creating a long-term viable HRD-strategy of cause influence the actual use of HRM tools and the ways that the cooperation between management and employees are carried out in the companies. Some of the results are

Use of tools without effect.A lot of companies have started using new tools in the HRM field. *All* the companies in this study have or had a plan for starting procedures for "development talks" between all managers and the individual employee they are managers for. *A* central aspect of these talks are the planning of the individuals participation in different kinds of education and training.

Contradictions within HRM. It has also been a common feature in the studied companies that there is not one single HRM-strategy in the companies. There are contradictory policies within the company - you might have a very broad competence for decision making within the product or the project you are working with - but you might have a very limited influence on the working hours.

A search for a "holistic approach " to change projects. The actual change projects have to be seen i n their specific context - and you have to have all aspects into account. It's not possible to have technology-projects as such - there will always be a range of questions in connection to organization of work, personal relations, new routines, etc.

The need for new approaches to postgraduate training, continuos vocational training and training activities as such. This means for instance the need for increased flexibility in education and understanding of training and development - instead of a relatively stable and conservative understanding of training and education as something you go to for a week at some public educational institution (an understanding that is very beavily supported by the fact that this is the easiest form to control when you have public funding).

Responses from the employees. The actual responses - and the ways that employees interpret this things -has to be seen in the light of the overall process of modernization of the modes of production. Individualization, Career planning, engagement, etc. changes the ways employees relates to their workplace. In short this means that you can't expect to see the traditional forms of conflicts or employee resistance in these actual processes. But you find reactions - both at the individual level and also problems at the organizational level:

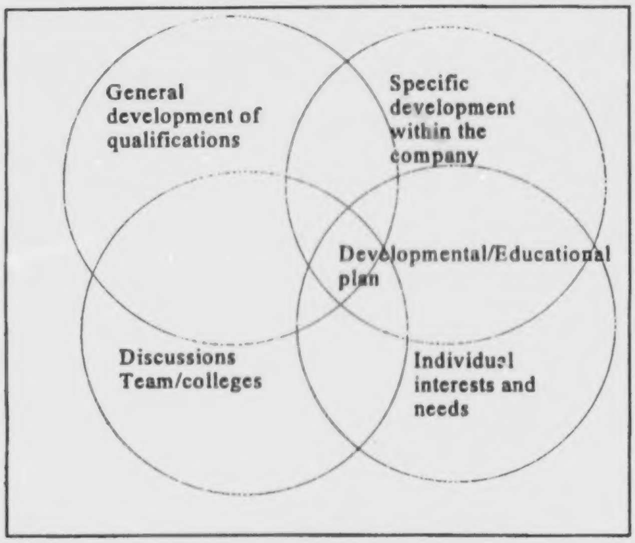
New problems for management. Strilces and other open conflicts are almost non-existent in this white-collar areas of companies - but problems appear in different spheres. Typically the management will experience problems with ~riployees leaving the company, departments that are not functioning very wel, feelings/cultures of mistrust and low engagement spreading all over the company, etc. This will be the way individuals that don't feel they have a good job will express their feelings.

The lack of real workplace democracy. If you want the employees to have a real commitment - and you want to have a real synergy between the individual and the organization, there is a need for increased democratization af the companies. Too much of the companies long-term strategies are embedded only in top-management and if you need a long-term strategy and a long-term commitment from the organization - you have to engage all employees in a much more comprehensive way.

Proposals for Action

The project behind this paper is a practical, action-oriented one - aimed at beeing able to give advice to unions, companies, employees. This has lead to three main proposals in the actual Danish context:

A new understanding of development strategies for employees - valuing the employees as individuals more than a certain "task-holder". In the practical HRM-tools there still are a conception of a very linear planning of the individual development in companies - based on a one-dimensional way of looking at the companies future needs for qualifications based primarily on the companys strategic plans for markets, technology, etc. . Instead of this we have started the development of a individual based planning model that takes four different element into account in the planning:


General development of qualifications
Specific development within the company
Developmental/Educational plan
Discussions Team/colleges
Individual interests and needs

The model describes four sources to input to the individual plan:
- the general development of qualification (as mentioned in this case internationalization, etc.)
- the specific developments within the company (could be specific investments in IT)
- the cooperation within a team or a departement (who wants to do what in the future)
- and finally the individuals own needs and ideas of the future.

Democratization of the Companies. The case studies have shown that a better usage of HRD, personal engagement and con~eteney building in companies have to be linked to a demokratization of companies. We don't have any final ~nodels for this, but in a danish context it is interesting that this aspect has rarely been ~discussed th:e iast 20 years - since some very ideological discussions in the early 70ies. In the meanwhile ~on fi=ds and o~er institutional investors have become much more influent (compared with traditionei o~n osvnerstup) and on the other hand management trends are focuseing on increasing the engagement and.the closer iinks between the employee and the company.

It must be time to discuss how we in general develop models that incorporate both financiaUeconomicai dernocMtization as well as a democratization of the actual management.

New Roll for the Trade Unions. Both the above mentioned proposals leads to very severe changes in the future roll of trade unions. On the one hand they have to recognise and support some very individual projects in the workplaces -accept and support that not all members have the same needs and the same whiskies for the future but need differentiated support. On the other hand unions have to engage in the discussion of democratization - even though it means that they have to support or engage in taking responsibility in comp~ues and thaefar leave tradidonal class-oriented notions of "us" - the employees - and "they" - the managers.

Management is too important to leave to the managers!

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Women of Color in Corporate America: We Still Have Far to Go

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The purpose of this interpretive study was to listen to the voices of women of color, and to reflect with them on the meanings of their experiences within their work settings. Their perspectives offer candid information about the barriers and facilitators to their full participation. Corporations can discern what steps they can take to engage the full potential of their present and future workforce.

Work place diversity is a business issue. The United States workforce is becoming more diverse, and companies face the challenges of meeting the needs of all their employees and resolving culturally induced organizational problems. Technological innovations and global competition necessitate the full utilization of skills of all employees so that maximum efficiency, quality, and customer service may be attained. There could be significant organizational liabilities from maintaining homogeneity and ignoring the diversity of employees: low employee morale, high absenteeism and turnover, lack of innovation, lower productivity, and a limit to recruitment and the size of the potential labor pool. No longer can businesses maintain a homogeneous view of their employee or assume that they will assimilate or leave. No longer can businesses afford not to tap the potential of their entire workforce. (Copeland, 1988; Cox, 1991; Fernandez, 1991; Thomas, 1991; Wilcox, 1991; Winterle, 1992; Wright, Ferris, Hiller, and Kroll, 1995).

The transformation to a multicultural environment requires strong executive leadership, a shift towards a pluralistic philosophy, and a long-term commitment to change. Organizations with a racially and ethnically diverse workforce quickly realize that physical proximity and good intentions will not necessarily result in a successful transition towards multiculturalism. Employees from the dominant group are faced with the need to alter their awarenesses and attitudes and to give up privileges; employees of color are challenged to move out of their isolation and to take risks. These interactions can lead to employee frustration, incidences of interpersonal conflict, and the potential of permanent racial divisiveness. Because of the complexity of the issues related to diversity, change must occur on the individual, group, and organizational levels (Gardenswartz and Rowe, 1994; Jamieson and O'Mara, 1991; Loden and Rosener, 1991; Thiederman, 1991).

The Research Process

The interpretive, hermeneutic research methodology, using the case study approach, provided the medium to uncover the realities of the work experiences of women of color. The research question was: "What are the meanings of the lived experiences of women of color within American corporate workplaces?" This study explored the specific issues women of color face within their work settings, and how the quality of their work lives was affected by their daily experiences.

The study involved eleven participants who were self-described as being a "woman of color" working in corporate settings. They were in positions ranging from direct customer services to management. Their identified heritages included the following racioethnic groups: African-American, Asian-American, Hispanic, and Native American.

The core of the learning from this study was found in the in-depth descriptions of the women's daily experiences, provided by the participants themselves. The participants agreed to journal over a period of one to two months. Their written reflections were followed up with conversational interviews, in which the significance and meanings of those experiences were explored, other issues were discussed, and background information was collected.

Each participant's written and spoken words were analyzed both thematically and existentially to determine their psychodynamic and professional issues. The resultant case studies

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summarized each participant's origins and formative experiences, her vocational history and career path, and her emotional, cognitive, and behavioral responses to the work environment.

The vocational experiences contained within the case studies were analyzed both individually and collectively, resulting in a second level of interpretation. Specifically, the case studies were re-examined to determine what professional issues predominated and were shared in common. Three primary themes emerged from that meta-analysis, which identified areas of concern and professional importance to the participants. The participants' work experiences were evaluated further, utilizing a five-point continuum to define their states of existence, from exclusion to appreciation.

Summary of Participant Characteristics

Participant	Race/ Ethnicity	Age	Position	# years in company	Psychodynamic Scripts	Professional Issues
Alexandra	Native-American	28 yrs.	Research Chemist	5 yrs.	Relationships Achievement	Mgmt support Stereotyping
April	African-American	52 yrs.	Human Resources	22 yrs.	Faith	Human relations Mgmt support Stereotyping
Asa	African-American	43 yrs.	Human Resources	15 yrs.	Feeling different	Communications Integrity
Beverly	African-American	25 yrs.	Customer Relations	8 yrs.	Security Achievement	Prejudice Mgmt support
Emily	Asian-American	28 yrs.	Executive Assistant	8 yrs.	Learning,growth Family	Mgmt support Wk/fam balance
Frances	Native-American	45 yrs.	Accounting	10 yrs.	Family Community	Human relations Wk/community Stereotyping
Lee	African-American	37 yrs.	Community Development	15 yrs.	Relationships	Prejudice Human Relations Mgmt support
Mary	African-American	47 yrs.	Sales and Marketing	8 yrs.	Hard work is rewarded	Stereotyping Recognition
Nan	African-American Hispanic	35 yrs.	Human Resources	12 yrs.	Family	Mgmt support Communications Wk/fam balance
Stephanie	Hispanic	35 yrs.	Community Development	7 yrs.	Family Relationships	Mgmt support Stereotyping
Sumiko	Asian-American	46 yrs.	Accounting	5 yrs.	Personal vulnerability	Stereotyping Human relations Mgmt support

The Predominant Themes

Three professional issues emerged from the case studies, which encompass the participants' experiences on the individual, group, and organizational levels. Those issues form themes which relate specifically to the participants' ability to be engaged fully in their work and to perform at their optimum level.

Stereotyping, Prejudice, and Discrimination The participants described numerous experiences in which they felt prejudged by their co-workers, because of such attributes as their racioethnic identification, gender, and age. Those stereotypic labels were limiting and often derogatory. They were barriers to the participants' inclusion within the work environment. One participant expressed her discouragement:

> *No matter how hard you try and how much you prove yourself . . . they still look at you and see 'black.' . . . Because you are a person of color, you are inferior.* (Lee)

The participants often felt that they were expected to represent an entire racioethnic group and to provide expertise related to that affiliation. Other aspects about their personality and capabilities were ignored or minimized. This participant's frustration was shared by others:

> *Because of my racial background it was assumed that I could provide the most expert opinion. It appeared the decision base on race and not on the basis of expertise.* (Stephanie)

Stereotyping caused the women of color to feel that they did not fit the corporate image and were outside the norm to achieve success. One participant voiced her discouragement:

> *I think people . . . are very willing to accept you if you have their values, their morals, and you look at the world the way they do . . . . Corporate America does not respond to people who do not fit the mold. So therefore, if you don't fit the mold, you are not going to get promoted.* (Mary)

Affirmative action was discussed as both a positive and negative force on conditions of persons of color in the workplace. The participants appreciated the opportunities that affirmative action policies provided, but they felt the stigma of being members of "protected" groups. Persons of color were perceived to have received preferential treatment, therefore, they were assumed to be unqualified. As a result, the participants felt that they had to prove their capabilities, in order to overcome negative stereotyping and prejudicial assumptions. The comments of two participants expressed the challenges they faced as women of color:

> *You have to prove yourself, over and over. You have to give 110%, [and] you are already doing your best. You do the best you can, but you're constantly under a microscope.* (Nan)
>
> *Gaining respect requires a lot of work -- and for a person of color it requires ten times the work . . . . I think you are held to a tougher and higher standard.* (Stephanie)

Interpersonal-Intergroup Issues The participants' relationships within the work group had a significant effect on their ability to focus on their jobs, their enthusiasm for work, and their commitment to the organization. The dynamics of the interpersonal and intergroup relations had the potential of being either barriers or facilitators to the participants' work performance.

The participants' ability to function fully within their work groups appeared to be determined by the treatment they received from their co-workers. Everyday interactions were important signals to one participant, influencing her feelings of safety and security:

> *After this day it really put my relationship with my peers in perspective. I guess I had an idea of how most whites felt about us as black people, but this really hit home . . . . This really showed me how polarized we are and that prejudice still prevails . . . . So you tend not to let your guard down, so you're always on guard.* (Lee)

Her co-workers overt exclusion directly affected this participant's investment in her work:

> *I felt a real challenge to integrate and to move again to the circle . . . . You keep going in, and they push you out . . . . I did get frustrated, and then I resigned to the decision . . . that I'm not going to engage. I'm just not going to participate. I'm not going to put myself in that position again.* (Asa)

The participants also reported positive experiences in which communications were direct and open, and relationships were supportive and respectful. This participant expressed her view on the importance of human relations:

> *I know that if we don't get to the human side we won't accomplish what we want to do on the corporate side . . . . The people part plays such an important role. How do we feel? Do we like coming to our jobs? Do we feel important? Do people seek out our opinions?* (Sumiko)

The shift from being simply accepted to being fully appreciated was dramatic for some of the participants. At that point they felt fully included, secure in the knowledge that their contributions to the organization were valued. One participant articulated her experience of being respected:

> *[Respect is to] value this person's opinion, really listen, probably really think that the person had something to contribute . . . that will benefit the organization.* (Emily)

Management Support The participants' need for the support of management was evident throughout the case studies. Their feelings of vulnerability as women of color were mitigated by their supervisors' attitudes and managerial skills. Their supervisors' abilities to facilitate open communications, to mediate conflicts, and to ensure fairness affected the participants' ability to concentrate on their work and to fulfill their potential. These participants expressed the negative effects on their work performance:

> *I feel an added stress, because I know management is looking at me through a microscope. They are waiting for me to fail . . . . It affects my day to day productivity. How can I not worry?* (Nan)
>
> *It's hard to concentrate and be productive because I'm not being supported.* (April)
>
> *It makes a tremendous amount of difference, because I've seen cases where some person does not have the support of their supervisor and . . . every day it's a constant challenge. They are not getting some of the basic things that they need to do their job.* (Stephanie)

The visible support of upper management was integral to the participants' sense of safety. The participants were appreciative of the direct and indirect efforts by management to facilitate their inclusion and professional development. They spoke positively about corporate support for work and family balance, positive role models and mentoring, and cultural pluralism:

> *I worked for a woman manager and we had a good working relationship over the years. We helped each other out to balance that work and home thing.* (Nan)
>
> *When I first got into supervision, I worked under two wonderful people. They taught me what I needed to know to be a good supervisor. They also taught me what to watch out for in the system. That meant a lot to me because I was the first black supervisor in the company and my mentors were white. I felt they appreciated me.* (April)

States of Existence

The purpose of the study was to develop a deeper understanding of the worklives of women of color in corporate settings, shedding light on the barriers and facilitators to the participants' fulfillment of their potential. A framework was designed, utilizing conceptual models developed by Roosevelt (1996) and K. J. Millhone (personal communication, November, 1996). Each position on the five-point continuum describes the relationships within the work group, as well as the organizational response to employee differences. The psychological impact of the participants' work experiences was evaluated within the context of these five states.

Exclusion Within the state of exclusion individual differences are disliked, avoided, and rejected. Harassing and hostile behaviors by co-workers and management are directed at persons of color. They may be told directly or by innuendo that the only reason they were hired or promoted was to comply with affirmative action policy. Therefore, they are assumed to be unqualified and incompetent. They are compensated inequitably and are denied opportunities to develop their capabilities and to advance. They are micromanaged and disciplined unfairly.

All of the participants, except one, described experiences of feeling rejected by their co-workers and undermined by their supervisors. The theme of negative stereotyping, prejudical remarks, and overt discriminatory actions predominated throughout these instances of exclusion.

Assimilation Individual differences are ignored, denied, or suppressed in the state of assimilation. Employees must assume the norms of the dominant culture, in order to be included and to participate within the organization. Persons of color are labeled with negative stereotypes, regarding their race, culture, or gender. While at work, they minimize their cultural background, and persons of lighter complexion may attempt to "pass" as a member of the dominant culture. Persons of color feel that they have to exert greater effort in order to receive the same rewards as the other workers, and that they must have an advocate in order to progress professionally.

All of the participants reported feeling the pressure to assimilate and to conform to the norms of the dominant culture. Negative stereotyping and unfair treatment by management caused the participants to repress their full identity and to maintain a cautious stance.

Tolerance Individual differences are acknowledged and may be expressed in the state of tolerance. This is a neutral position, in that the differences are viewed neither negatively or positively; however, diversity is not valued. Persons of color are racially or ethnically categorized, and their identity is limited within those boundaries. They are assigned roles within the orgranization based on their identification as a diverse person. Interactions between persons of color and the workers of the dominant culture is formal. Persons of color are able to form networks with others who have similar racioethnic backgrounds and to have mentoring relationships which facilitate their professional development.

Instances of tolerance were less evident in the participants' accounts. Perhaps the emotional neutrality of that state resulted in those experiences being less noticeable. The perceptions of being tolerated were conveyed mostly through stereotypic remarks in which the participants' identities were categorized by racioethnic stereotypes, and their work was often determined within those bounds.

Acceptance The distinctions between diverse groups are blurred in the state of acceptance, and effective relationships are formed. At this point, persons of color and their co-workers communicate openly, directly, and respectfully, and they make efforts to improve intercultural understanding. The positive interactions are instrumental in the accomplishment of personal, team, and organizational goals. Informal and formal mentoring relationships are formed to enhance the career development of all workers.

Participants noticed with gratitude and enthusiasm those instances when they felt accepted. Their everyday interactions with their co-workers and supervisors, were instrumental in building open and trusting relationships. Unfortunately those instances of inclusion occurred far less frequently than those of tolerance, assimilation, and exclusion.

Appreciation All workers are valued for their individual contributions in the state of appreciation. Differences are considered to be beneficial to the organization's creativity, adaptability, and quality. Persons of color and their co-workers make mutual adaptations and interact freely across departments, functions, and job levels to meet organizational goals. Management recognizes and rewards individuals and teams for their accomplishments.

Since this state is the highest level of development within an organization, the participants seldom reported feeling appreciated for their contributions. The participants valued those occasions when their supervisors recognized and appreciated their work accomplishments.

Facilitators to Inclusion: The Participants' Perspectives

Although the participants were not asked directly to offer recommendations, their written and spoken words provided indications about what endeavors within their organizations facilitated positive work experiences and enhanced their professional commitment. The participants' comments revealed the significance of various corporate initiatives, and how those efforts have impacted their daily work lives. Their perspectives are grouped into four general areas which the participants found to be particularly helpful.

Mentoring Mentoring, both informal and formal, was mentioned frequently by the participants to be an important factor in their career advancement. They valued having someone ahead of them within the organizational hierarchy who would serve as a role model, advocate, and protector. The participants' needs ranged from job security, to vocational development, to career advancement. In all cases, the participants expressed feeling vulnerable, as members of underrepresented groups, as well as lacking clout and savvy to navigate through organizational politics.

Employee Networks The participants also spoke positively about the presence of networks for persons of color within their work settings. Within those groups they found emotional support, affirmation for their worldview, and relief from the pressures to assimilate. Out of that base of security, the participants were more able to cope with the everyday stressors from being a distinct minority within the dominant culture.

Culturally-Sensitive Supervisors and Managers The participants' isolation was either heightened or reduced by the level of multiculturalism within the management structure. Some felt a gap between their own cultural norms and those of the organization. A few appreciated the unusual opportunity of having a manager who was of the same racioethnic heritage. Other participants expressed appreciation for their managers' sensitivity to work and family balance and their openness to flexi-scheduling.

Diversity Programs All of the corporations within the study had implemented diversity programs, which included cultural awareness and sensitivity training, as well as career development programs, such as the Glass Ceiling Initiative. Formative evaluations of those corporate efforts can be made by listening to the participants' perspectives about how the dynamics of their work environments had been affected, and whether their potential for advancement had improved.

The most common criticisms of the diversity initiatives were that the effort was limited in scope and had minimal impact on employee attitudes; that the supervisors did not reinforce the principles of diversity within the work group; and that upper management was not visibly supportive of the effort. In some instances, the corporate diversity efforts had surfaced sensitive issues, but did not provide the training and support needed to resolve worksite conflicts.

Recommendations for Corporate Change

The journey to multiculturalism is pervasive, continual, and profound. The following recommendations are grounded in the philosophy that multiculturalism is integral to all processes of the organization, such as human resource management, administrative functions, and product development and delivery. Secondly, the recommendations address transformational change on the individual, group, and organizational levels. Finally, multiculturalism encompasses the cognitive, attitudinal, and behavioral domains of all persons within the corporate community.

The thoughts, feelings, and perspectives of the participants in this study have provided the foundation for these recommendations. The meanings of their experiences, as women of color, explicate the organizational barriers and facilitators to their ability to perform optimally. Through the lens of their diversity, the following recommendations are offered.

Transformation Is Envisioned, Directed, and Enforced by Senior Management The leaders must understand that diversity is both a business and an ethical issue.. They must ensure its integration into the organization's mission, values, and all aspects of strategic planning. An audit of the organizational culture must be conducted to examine its level of inclusivity and responsiveness to individual needs and lifestyles and to determine necessary changes in the corporate structure and processes. Diverse groups must have equitable access to resources and opportunities, so that diversity is reflected on all organizational levels. Senior management is responsible for enforcement of the standards of multiculturalism, and for rewarding employees accordingly.

Stereotyping, Prejudicial Attitudes, and Discriminatory Behaviors are Reduced Cultural awareness education must be provided throughout the workforce to raise the level of consciousness and sensitivity to individual differences, and to facilitate an inclusive corporate environment. Diversity goals must be determined, inclusive behavioral norms established, and all employees throughout the organization must be held accountable to those standards.

Interpersonal-Intergroup Dynamics are Improved The interactions within and between work groups must be monitored to ensure respectful and equitable treatment of all persons.

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Particular attention must be paid to informal and formal communications, conflict mediation, and decision making processes. Employees must be provided training opportunities to improve their interpersonal skills and to facilitate teambuilding. Persons from underrepresented groups must have opportunities to participate in employee networks and to form supportive mentoring relationships.

Professional Development of Supervisors and Managers is Promoted Managers are responsible for the recruitment and retention of a diverse workforce. Persons of color rely on the ability of their immediate supervisors to provide support, intervention, protection, and leadership. Therefore, supervisors and managers must be provided comprehensive training in all aspects of employee management, such as hiring, orientation, supervision, training and career development, within the context of multiculturalism.

The Value of the Study

Diversity within corporations has become increasingly important in terms of organizational performance and vitality. However, movement from monculturalism to multiculturalism is difficult, costly, and tenuous. Most companies have already implemented programs to accomplish that transformation, yet the evaluation of the results is often incomplete, and the long-term outcomes are yet to be determined.

This study has the potential of offering valuable information to individuals who are members of the working community, to the academic community who are interested in organization development, and to practitioners who hold responsibilities in human resources, supervision, and management. This process of listening, reflection, and interpretation has provided in-depth understanding about the lifeworld of women of color within their corporate environments. Their perspectives offer the corporate community the opportunity to effect significant and effective changes which will impact the performance of the entire organization.

In their own words, the participants have described the issues which are of greatest concern to them and which impact their work performance. One participant, who had been an EEO investigator, shared the wisdom of her experiences and lifeworld:

> *You fix one problem, you think that you got it locked up, and suddenly the phone rings, and you are back in the same place that you were the day before . . . . It was discouraging, because you realize that we still have so far to go . . . . I mean this stuff is very institutionalized . . . . Trying to fight racism takes . . . more than an office of EEO and Diversity . . . . We have got to engage everyone in this process. Because, if we don't have more people working towards changing . . . it's never going to happen.* (Asa)

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Never the Twain Shall Meet?: A Glimpse into High Performance Work Practices and Downsizing

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Evidence from a national cross-industry survey of over 200 establishments provides a glimpse into the relationship of two practices with notoriously contradictory effects on employee commitment--high performance work systems and downsizing--to organizational performance. We find that high performance work systems are associated with not only less downsizing, but also improved performance even in the presence of downsizing activity. We then examine the consequences of specific downsizing practices for different types of performance.

Management innovations and business practices come and go, but seemingly contradictory practices often coexist. One example in today's business environment is the uneasy tension between the practices of downsizing and high performance work systems (HPWS). High performance work systems, also called high involvement or commitment work systems, depend upon trust and mutual respect between passionate leaders and motivated and committed employees for their success. Companies with high performance work systems herald that "people are our most important asset." By contrast, downsizing is aimed at trimming this asset down to size. The tendency for downsizing to lower employee morale and motivation has been well documented (Brockner, 1988).

Remarkably, both practices seem to be the product of the same socio-economic forces. Rising competition, new information technologies, and rapid change have led increasing numbers of companies to undertake innovations in how organizations are run, work is organized, and people are managed. As a result, both practices not only coexist within the same economy, but have also been implemented at the same time within the same organizations. De Meuse, Vanderheiden, & Bergmann (1994, p. 525) observed, "Paradoxically, many of those same companies that are trying to foster employee commitment also are the ones conducting massive layoffs, streamlining operations, and relocating plants overseas."

The primary question addressed by this paper is what is the relationship of downsizing and HPWS to organizational performance. In particular, what happens in companies that use both practices? De Meuse et al. (1994) speculate that when companies try to build employee commitment while cutting staff wherever possible, employees might not support either effort unless a new employer-employee relationship is constructed.

Can downsizing undermine the effectiveness of HPWS entirely? While organizations and their employees can often adjust to initial cuts by treating displaced employees humanely and providing training for survivors, anecdotal evidence suggests that repeated downsizing efforts tend to be especially damaging to efforts to maintain high performance work systems and to the organization's overall performance. Or, do high performance work systems lessen the need to downsize? If high performance work systems do enhance organizational performance, organizations with these practices may be less likely to undertake downsizing, or at least, less extensive workforce reductions.

Our final research question involved identifying the downsizing strategies which appear to be most compatible with HPWS. Recent evidence reveals that relatively few organizations have successfully implemented HPWS while simultaneously engaging in downsizing (Gephart & Van Buren, 1996). Previous research on downsizing has shown that the manner in which the process is

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managed can have a significant influence on outcomes at both the individual and organizational levels (Rosow, Casner-Lotto, & Hickey, 1996). Actions such as voluntary early retirement programs and involving employees in the downsizing process tend to produce more positive results. Within downsizing organizations, we examine a number of methods used to carry out job eliminations or workforce reductions and to assist displaced employees and their influence on measures of organizational performance.

High Performance Work Systems

Many claim that high performance work systems represent a new vision of what constitutes an effective organization. A notable feature of contemporary high performance companies is their emphasis on the importance of people for organizational performance and competitiveness. Researchers studying such companies have begun to view a firm's human resources as a unique source of competitive advantage that is difficult for its competitors to replicate (Cappelli & Singh, 1992; Pfeffer, 1994).

No single, accepted definition of the components of a high performance work system exists, though there is considerable overlap among researchers. For example, Bailey (1994) focused on characteristics such as expanded training for employees, employee involvement, team-based production, group incentives, improved information processing, and improved technology. MacDuffie & Krafcik (1989) investigated factors such as the use of work teams, job rotation, statistical process control, recruitment and hiring policy, compensation contingent on productivity, and level of ongoing training. Appelbaum & Batt (1994) identified a set of strategies that lead to high performance: work reorganization, human resource strategies, management methods, and industrial relations strategies.

Multidisciplinary Research. Theory and research that contribute to our understanding of HPWS have been carried out in parallel across a number of different fields, particularly human resource management and industrial relations, and often as part of the broader study of organizational transformation and its effect on organizational effectiveness and performance. Research on high performance work systems in the industrial relations literature has revealed the importance of various innovative work practices and process, but tends to be confined to manufacturing industries, especially automobiles (e.g., MacDuffie, 1995; Bailey, 1994; MacDuffie & Krafcik, 1992). Increasingly, industrial relations scholars have been joined by human resource management (HRM) scholars concerned with the effects of particular human resource management practices on individual and organizational performance and their relationships to other organizational components such as the culture, mission, and business strategy.

Research within other fields, such as organizational behavior, industrial/organizational psychology, and sociology has focused on factors that complement those emphasized in the industrial relations and human resource management literature, such as corporate culture, climate, and employee participation (Berg, Appelbaum, Bailey, & Kalleberg, 1994; Mitchell, Lewis, & Lawler, 1990).

Systems Perspective. In the past, research focused on the effects of separate work and human resource practices and processes on individual-level outcomes. A mounting body of evidence, however, suggests that the most fruitful approach to high performance work involves a *systems perspective* (Brown, Reich, & Stern, 1993; Kochan & Useem, 1992). The systems view holds that a combination of coherent, interrelated work practices has greater effects on performance than either the effect of any single practice or the sum of the effects of the individual practices.

For example, Ichniowski, Shaw, & Prennushi (1993) grouped HRM practices into clusters representing four HRM systems. They found evidence that firms that adopted complementary sets of HRM practices had higher productivity than firms that did not. They also found that complementary sets of practices had greater effects on productivity than the sum of the effects due to individual practices. More recently, MacDuffie (1995) identified different bundles of interrelated and internally consistent human resources practices that interact with manufacturing practices and work practices to increase both productivity and quality.

Downsizing

Downsizing has been an especially popular topic in both business and academic circles over the past couple of years. Although often seen as the latest buzzword for good old workforce reductions and layoffs, it has taken on new importance as companies began to shed employees in record numbers, and for reasons not always associated with economic decline.

The numbers as reported by the business press are impressive. According to the American Management Association (AMA Research, 1995), 50% of all companies surveyed eliminated jobs between July, 1994 and June, 1995. For some companies, downsizing has almost become an annual rite, with nearly 24% reporting that they downsized three or more times between January, 1990 and June, 1995.

The AMA evidence also reveals, however, that the majority of companies that downsize do not realize the economic benefits they expect. More sophisticated analyses support this finding as well. The most thorough, a recent study by Cascio, Young, & Morris (1996) of 5,479 firms, found that downsized companies where no better off than their counterparts over a three-year period in terms of productivity, expenses, profitability, or stock return. Another study by Mitchell & Co. calculated that three years after downsizing, the share prices of downsized companies fell to an average of 26% below the share prices of their competitors. Likewise, De Meuse et al. (1994) report that financial performance among companies that announced layoffs actually worsened over the next two years on all five measures of performance they examined.

Best Practices. In the midst of this frenzy, some scholars have begun to look at methods which companies can use to downsize effectively, if downsize they must (Cascio, 1993; Feldman & Leana, 1994). Spearheading this effort was a stream of research on best practices in downsizing beginning with Cameron, Freeman, & Mishra (1991).

Particularly relevant to this paper is a study of 30 firms in the automotive industry by Cameron (1994). The study examined the relationships between a number of different downsizing practices (e.g. downsizing by attrition) and measures of organizational performance. He found four specific practices associated with improvements in performance and four practices associated with deterioration in performance. Cameron grouped practices into three typical, but not mutually exclusive, downsizing strategies: workforce reduction, work redesign, and systemic change.

Mishra & Mishra (1994) extended this research by employing the three downsizing strategies in a study of 91 business units in the automotive industry. They observed that a pure workforce reduction strategy had a consistently negative impact on organizational performance. By contrast, downsizing which occurred through work redesign or systemic change had a consistently positive relationship with performance.

Their research also perhaps comes closest to looking at the interplay between high performance work systems and downsizing. As noted above, mutual trust is a key feature of successful high performance work systems. Mishra and Mishra found that mutual trust between top management, employees, and customers and suppliers was the optimal condition for organizational performance. They conclude that "it is critical to create a culture of mutual trust before embarking on a downsizing program" (p. 274).

Data

Unfortunately, no systematic evidence is available on the extent to which organizations have pursued HPWS in the context of downsizing, or the workforce reduction strategies used by successful high performance organizations. Although the issue of compatibility between HPWS and downsizing is complex, both sets of research suggest a clear need for systematically collected information on the coincidence of the two trends in a random sample of organizations.

Sample. In June 1996, the ASTD Research Department administered a mail survey to a national sample of 1500 establishments in four industry groups: manufacturing; transportation, communications, and public utilities; finance, insurance, and real estate; and services. The industry groups were chosen because the extent of downsizing and the nature of the work in these industries were expected to produce some interesting contrasts. This unique sample was drawn from two populations to increase the likelihood of achieving a nationally representative sample. Approximately 850 of the establishments were drawn at random from a list of ASTD members in these four industry groups. The remaining 650 establishments were drawn randomly from a list of 1,000 human resource managers in the four industry groups compiled by the Southeastern Institute for Research (SIR). The survey yielded 204 responses for an effective response rate of 15 percent after discounting ineligibles and inactive establishments. (Actual N's for the analyses vary depending on the number of cases with missing data.)

Although ASTD respondents were smaller than ASTD non-respondents, multivariate response bias analyses controlling for industry found no significant differences between the two groups. Likewise, no response bias according to size, industry, and age was detected in the SIR sample. On average, respondents from ASTD membership tended to be younger, smaller, and more likely to use innovative human resource and training practices, but were otherwise similar to SIR respondents.

***Instrument*.** The survey instrument consisted of a five-page questionnaire with four major sections. Section I contained questions requesting basic background information on the organization, such as its age and total payroll. Section II collected information on the use of human resource management and training practices in 1995 and 1992. Section III asked questions regarding the number of employees at the organization, the number of jobs created or eliminated, and the job elimination strategies employed since 1992. Finally, Section IV requested information about the organization's performance in 1995 and 1992 on a number of different measures.

***Key Variables*.** High performance work systems: Although there is considerable overlap across studies, no single, accepted measure of a high performance work system exists. Factor and cluster analyses are commonly used to group organizations with coherent sets of work practices together in search of the group with the highest level of performance. For example, Arthur (1994) employed ten practices and arrived at six clusters of organizations, while Ichniowski (1990) produced nine groups from six practices.

Factor analyses of 15 human resource and work practices identified from the high performance work systems literature produced three coherent factors. The first consisted of four alternative compensation practices: profit-sharing, employee stock ownership plans (ESOPs), team-based compensation, and incentive compensation (alpha = .60). The second factor was comprised of work practices commonly associated with the quality movement: job rotation, quality circles, self-managed teams, total quality management programs, access to business information, and employee involvement (alpha = .81). The final and weakest factor grouped together several alternative reward mechanisms: gainsharing, skill- or knowledge-based pay, and employment security policies (alpha = .40).

Three scales were created out of these factors by averaging the percent of employees covered by the practices in each factor. Scores on the three factors were then averaged to produce a single composite measure of high performance work systems. The items in this measure and manner in which it was constructed bear much resemblance to Lawler, Mohrman, & Ledford's (1995) measure of employee involvement.

Downsizing: Measures of downsizing vary widely across research on the topic, two of which we chose to examine. The first, following the practice of Cameron and his colleagues, measured the percent change in total employment at the establishment from 1994 to 1995. We also asked respondents to report both the number of jobs eliminated and created at the establishment over the same period. Job elimination as an indicator of downsizing has been used by several studies, including the AMA annual surveys (AMA Research, 1995). However, as the AMA data reveals, because job elimination is often compensated for by job creation, this measure is less indicative of actual workforce reductions or layoffs.

Performance: Data were collected on a number of objective and subjective measures of organizational performance. Due to extremely high levels of missing data, the objective self-reports could not be used. Respondents were much more willing to provide subjective assessments of performance. They were asked to indicate the extent to which the performance of their establishments versus their goals had changed between 1994 and 1995 using a 5-point scale on five measures: quality of products and services, quality of work life, employee satisfaction, customer satisfaction, and overall performance. A factor analysis of the five measures produced a single composite measure of organizational performance (alpha = .79). Scores on the five measures were averaged to produce a scale of organizational performance.

Results

Descriptive Analyses. We begin by examining the incidence of high performance work practices and downsizing practices in our sample. Respondents reported the percentage of non-managerial employees covered by each high performance work practice in 1995. The practices of gainsharing (13%), team compensation (16%), and knowledge/skill-based pay (17%) were used by the fewest organizations, while job rotation (64%) and quality circles (60%) were the most popular. Self-managed teams, one of the practices most commonly associated with high performance work systems, were employed by 37 percent of the organizations. The incidence of high performance work practices in our sample compare favorably with estimates obtained in other studies ("Industry Report 1996," 1996; Lawler et al., 1995). The average percentage of employees covered by each practice among those using the practice ranged from 36 percent for self-managed teams to 87 percent for profit-sharing. Organizations in the transportation, communications, and public utilities industry led the other industry groups both in terms of incidence and coverage.

Downsizing, as measured by change in employment, occurred in about 35 percent of the establishments between 1994 and 1995. This figure is somewhat higher than estimates over roughly the same period produced by the AMA (27%) (AMA Research, 1995) and *Training* magazine's survey (31%) ("Industry Report 1995," 1995). However, when we look at the amount of downsizing in the same four industries in these latter two studies, the numbers appear to fall somewhere between 31 and 35 percent. The picture is actually rosier than it is bleak: on average, establishments increased in employment by 7.8 percent.

Our results also show that employment decreases and job elimination are not synonymous. Nearly 60.5 percent of respondents indicated that they had eliminated jobs over the same period. Only half of those establishments also reported an employment decrease. When job creation is included, only 36 percent of establishments had a *net* decrease in the number of jobs. On average, establishments in the sample eliminated 42 more jobs than they created.

Establishments that eliminated jobs were also asked about the methods and actions they employed to achieve their eliminations and the types of assistance provided to displaced employees. The most popular downsizing practice was eliminating jobs through attrition used by 71 percent of these companies, while eliminating entire levels of management was used by only 13 percent. Among downsizing actions, 64 percent communicated the causes of the job eliminations to employees, but only 15 percent involved employees in those decisions or tried other cost cutting measures first. Extended pay/benefits was the most common form of assistance (64%), while a disappointing 23 percent provided retraining to displaced employees.

Downsizing and HPWS Correlates. Relatively few characteristics of organizations in our sample were significantly correlated with either HPWS or downsizing. HPWS for instance was negatively associated with two factors: organization size and being located in the service sector. Downsizing meanwhile was positively associated with larger organization size, a common finding in previous research on the topic (AMA Research, 1995; Van Buren, 1994), and the percent of employees covered by collective bargaining contracts (discussed below).

Organization size is obviously an important factor; although larger organizations are more likely to downsize, they are less likely to implement extensive high performance work systems. The relationship between HPWS and size is somewhat unexpected since most examples in the popular literature are drawn from large organizations. Implementing HPWS, however, is a radical departure from the traditional, bureaucratic design of most large organizations. It is certainly plausible that smaller organizations can more easily undertake this transformation. In addition, they may be able to include more employees in the high performance practices since jobs tend to be less narrowly specified.

The negative relationship between HPWS and service sector is to be expected for several reasons. Service organizations tend to be smaller on average, many of the principles behind HPWS were first implemented in the manufacturing sector, and high performance practices appear to be more difficult to apply to knowledge work (Gephart & Van Buren, 1996).

Bivariate analyses also show that organizations which have more extensive high performance work systems are less likely to report employment decreases. Non-downsizers had a significantly higher mean score on the HPWS scale and used more work practices that covered 50 percent or more of their employees (3.8 versus 2.7). In particular, organizations which offered incentive compensation to their non-managerial employees and provided access to pertinent business information were less likely to downsize.

Logistic regressions of the likelihood that organizations downsized between 1994 and 1995 confirmed this relationship. Controlling for organization size, the high performance work systems scale had a negative effect on the likelihood of downsizing. (Supplemental regressions showed no influence of HPWS on the magnitude of the employment change.) The zero-order effect of unionization, however, was non-significant. The fact that larger organizations were more likely to be unionized suggests that the relationship of unionization with downsizing is probably mediated by size.

Apparently, HPWS lessens the need for companies to reduce the size of their workforce. One possible interpretation of this finding is to view downsizing as a proxy for poor performance. After all, downsizers in the sample exhibited significantly less improvement in overall performance versus goals, particularly in the quality of products and services. The effect of HPWS on downsizing may be the result of improved organizational performance in companies which make heavy investments in eliciting employee commitment. Companies with committed employees improve or maintain their performance and thus have less need to reduce their workforces.

A more precise way to examine this interpretation is to look at the direct effect of HPWS on organizational performance. The performance scale discussed above was regressed on organization size, the HPWS scale, and a dummy variable for whether the organization had downsized, controlling for whether the establishment was part of a multi-establishment firm. All three of the key independent variables had a significant influence on performance.

Organization size, as expected, had a positive direct effect on organizational performance. And, confirming the zero-order relationship above, companies that downsized had significantly poorer improvement in performance versus goals. More importantly, even after controlling for downsizing, the use of high performance work systems had a significant and positive effect on performance. This latter result suggests that the impact of high performance work systems on performance is both direct and indirect through downsizing.

In an effort to assess the systems perspective which underlies the notion of HPWS, we also regressed organizational performance on the individual human resource and work practices in the HPWS scale, using the above model. Consistent with the systems perspective, none of the practices by themselves had a significant effect on performance. Thus, we can conclude that it is the emergent effects of a coherent and complimentary set or bundle of high performance practices that enhance performance.

Our last research question concerned the compatibility of various downsizing practices with HPWS. To address this question, we confined our final set of analyses to companies that had downsized between 1994 and 1995. Using the model specified above, we regressed the performance scale and then the individual performance measures on organization size, multi-establishment status, the HPWS scale, and the individual downsizing practices.

Curiously, none of the downsizing practices were related to either the performance scale or the measure of improvement in overall performance. Instead, we found that individual downsizing practices influenced particular measures of performance. Although interpretations of each relationship are beyond the scope of this paper, it is noteworthy that organizations may achieve different results by using different combinations of downsizing practices (see Table 1).

Table 1

		Performance	**Measures**	
Downsizing Practices	Quality of Products & Services	Quality of Work Life	Employee Satisfaction	Customer Satisfaction
Eliminated Levels of Management.		**Negative**		
Eliminated Functions/Depts.		**Negative**		
Early Retirement			**Negative**	
Identified High Potential Employees			**Positive**	
Conducted systematic task analyses				**Negative**
Communicated causes of Eliminations	**Positive**			

Next, we assessed the compatibility of each of these practices with HPWS by creating interaction terms between the significant practices and the HPWS scale. The results of these analyses, however, were disappointing as none of the interaction effects were significant. Correlations between these particular downsizing practices and the HPWS scale revealed that high performance organizations were no more likely to use them than other organizations. Further analyses are needed to test the possibility that, in keeping with their systems orientation, high performance organizations use more effective combinations or sets of downsizing practices.

Conclusion

Like most organizational research, HRD research suffers from a lack of solid evidence tying *systems* of human resource practices to performance beyond the individual level. The importance of a systems perspective is evident from previous Strategic HRM research showing that human resource and work practices are more effective when used in bundles rather than in isolation.

Our study confirms that high performance work systems are associated with improved organizational performance across a national sample of organizations. We extend this conclusion by illustrating that the performance-enhancing effects of high performance work systems occur regardless of the performance-reducing effects of downsizing, an action which often results in lower employee commitment, motivation and trust. In addition, we find that certain downsizing practices affect performance, as measured by employee and customer satisfaction and quality of work life, more adversely than other practices.

As the roles of HRD practitioners become increasingly proactive and they experience mounting pressures to demonstrate the contribution of various HRD initiatives, our study provides reasons for HRD practitioners to be optimistic that their efforts can enhance organizational performance despite the presence of forces which require that their organizations downsize. The significance of systems of human resource practices, provides another impetus for the shift towards diagnosing larger performance problems and creating performance-enhancing solutions.

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Performance Diagnosis Matrix: A Discussion of Human Resource Development Scholarship

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The field of Human Resource Development (HRD) draws from many disciplines and is working to continually develop a strong theoretical base. This discussion offers a stronger understanding of the elements necessary to improve organizational performance by researching seminal authors and research studies for concepts raised in Swanson's (1994) Performance Diagnosis Matrix. These fifteen questions address performance variables (mission/goal, systems design, capacity, motivation, and expertise) at three performance levels (organizational, process, and individual).

Even a brief review of the literature in the field of Human Resource Development (HRD) reveals that scholars believe that the field is in need of more scientific research and theory building (Arnold, 1996; Sleezer, 1996; Watkins, 1990). In his book Analysis for Improving Performance: Tools for Diagnosing Organizations and Documenting Workplace Expertise, Swanson (1994) presented a matrix of questions which enables a HRD professional to conduct a performance diagnosis towards the goal of improving organization performance. His matrix of three levels of performance (organization, process, and individual levels) and five performance variables (mission/goal, systems design, capacity, motivation, and expertise) creates fifteen questions that the HRD analyst can use with organizational leaders to optimize performance. Regardless of one's choice to employ Swanson's (1994) framework, these 15 questions raise *concepts* that are essential to any HRD professional's work and research.

Figure 1. Performance Diagnosis Matrix of Enabling Questions

Performance Variables	**Performance Levels**		
	Organizational Level	**Process Level**	**Individual Level**
Mission/Goal	Does the organizational mission/goal fit the reality of the economic, political, and cultural forces?	Do the process goals enable the organization to meet the organizational and individual mission/goals?	Are the professional and personal mission/goals of individual's congruent with the organization?
Systems Design	Does the organizational system provide structure and policies supporting desired performance?	Are processes designed in such a way as to work as a system?	Does the individual design support performance?
Capacity	Does the organization have the leadership, capital, and infrastructure to achieve its mission/goals?	Does the process have the capacity to perform (quantity, quality, and timeliness)?	Does the individual have the mental, physical, and emotional capacity to perform?
Motivation	Do the policies, culture, and reward systems support the desired performance?	Does the process provide the information and human factors required to maintain it?	Does the individual want to perform no matter what?
Expertise	Does the organization establish and maintain selection and training policies and resources?	Does the process of developing expertise meet the changing demands of changing processes?	Does the individual have the knowledge, skills, and experience to perform?

The concepts undergirding each of the enabling questions posed in the Performance Diagnosis Matrix originate from diverse fields. It is in these fields, too, that solutions to many HRD challenges are to be found. Passmore (1997) discussed that, because HRD is a field of practice and not a discipline itself, it is critically important that the research conducted in the field

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has "broadly understood and accepted theoretical and empirical underpinnings" (p. 3) from various disciplines.

Purpose, Process, and Format

This article researches the theoretical underpinnings of the concepts that underlie HRD issues, using the enabling questions proposed in Swanson's (1994) Matrix as an organizing framework. For each cell of the Matrix, two types of scholarship were identified:

1. Foundational: One piece, considered to be foundational to the understanding of the underlying discipline posed in that cell, was identified. These books or articles were chosen based on the criteria that the author(s) had made a significant scholarly contribution to their field.
2. Research: A quantitative or qualitative research study that develops new knowledge about *one aspect* of each cell's question was selected. A research study supplements intellectual thoughts found in foundational pieces and ensures (a) the development of new knowledge in the field and (b) more grounded theories for application.

It is noted that the scholarship chosen to address the performance variables and levels is only representative of *some* of the thinking that can be found in the multiple fields. This study is not meant to be an exhaustive review of the scholarship in each field. In addition, due to the contributions of diverse scholars to the multiple elements reviewed here, it should be noted that the placement of certain authors can be considered arbitrary.

This article briefly discusses the scholarship chosen for each variable at the three levels. The authors and research studies that are examined are presented in Figure 2, with the first name in each box representing the author(s) of the foundational piece and the second name representing the author(s) of the chosen research study.

Figure 2. Authors of Selected Foundational and Research Publications

Performance Variables	**Performance Levels**		
	Organizational Level	**Process Level**	**Individual Level**
Mission/Goal	Porter (1987) Miller & Cardinal (1994)	Juran (1988) Cleveland, Schroeder & Anderson (1989)	Locke & Latham (1990) Terpstra & Rozell (1994)
Systems Design	Nadler, Gerstein, Shaw & Associates (1992) Amburgey & Dacin (1994)	Churchman, Ackoff & Arnoff (1968) Buzacott (1996)	Hackman & Oldham (1980) Campion & Thayer (1985)
Capacity	Penrose (1995) Govindarajan (1988)	Hayes & Wheelwright (1979) Kim, Ritzman, Benton & Snyder (1992)	Dunnette & Fleishman (1982) Englebrecht & Fischer (1995)
Motivation	Kleinbeck, Quast, Thierry, & Häcker (1990) Petty, Beadles, Lowery, Chapman & Connel (1995)	Davenport (1993) Maull, Weaver, Childe, Smart, and Bennet (1995)	Shamir (1991) Petty, McGee, & Cavendar (1984)
Expertise	Campbell, Campbell & Associates (1988) Lyau & Pucel (1995)	Jacobs & Jones (1995) Jacobs (1994)	Goldstein (1993) Papa & Graham (1991)

Mission/Goal Variable

Organizational Level / Foundational Michael Porter (1987) has written some of the most compelling and definitive works regarding competitive strategy in the face of environmental challenges. In his book, Competitive Strategy: Techniques for Analyzing Industries and Competitors, Porter (1987) defined corporate strategy and changed the face of strategic planning in his prescription of six elements that must be included in a strategic plan.

Organizational Level / Research In "Strategic Planning and Firm Performance: A Synthesis of More than Two Decades of Research" by Miller and Cardinal (1994), the authors, using a meta-analysis of 26 previously published studies, found that strategic planning positively influences firm performance. In addition, they contested that methodological differences across studies were primarily responsible for the inconsistencies reported in past literature.

Process Level / Foundational Process goals linked to strategy and the individual was the underlying foundation of the quality approach presented in Juran on Planning for Quality. Juran (1988) suggested that the organization translate a clear set of strategic goals into tangible product goals that can then serve as the basis for the design of a dependable process that performs.

Process Level / Research Cleveland, Schroeder & Anderson's (1989) "A Theory of Production Competence" argued that production competence is a variable attribute that can be measured and that process capability positively contributes to business performance. Using an extensive diagnostic procedure of six companies, this study validated that production competence is indeed the link between production process and business strategy and goals.

Individual Level / Foundational Much of the current research on goal setting focuses on the individual in isolation, rather than on the need of aligning individual goals with those of the organization. Locke and Latham's (1990) work, A Theory of Goal Setting and Task Performance, proposed a coherent, data-based theory of goal setting that focuses on motivation and satisfaction as two measures contributing to our understanding of goal congruence.

Individual Level / Research "The Relationship of Goal Setting to Organizational Profitability," by Terpstra and Rozell (1994), investigated the relationship between profitability and organizations which implemented goal setting programs. Their research found that organizations which used goal setting or its applications to increase employee performance experienced significantly greater profits and profit growth.

Systems Design Variable

Organizational Level / Foundational Organizational Architecture: Designs for Changing Organizations, by Nadler, Gerstein, Shaw and Associates (1992), focuses on the fit between an organization and its environment in addition to the congruence of its design elements. Thus, "the formal structure, the design of work practices, the nature of the informal organization or operating style, and the processes for selection, socialization, and development of people" (Nadler et al., 1992, p. 4) are included in the concept of organizational architecture. Their model clearly addressed the relationship between the structure of an organization and its desired performance.

Organizational Level / Research Amburgey and Dacin (1994) examined the strategy-structure relationship in "As the Left Foot Follows the Right? The Dynamics of Strategic and Structural Change." The authors' research found that changes in strategy are more likely to effect changes in structure quicker and with more magnitude than changes in structure effect strategy. This study underscores strategy's key role in setting the direction for performance and the importance of organizational structure and systems in supporting that strategy.

Process Level / Foundational Introduction to Operations Research, by Churchman, Ackoff & Arnoff (1968), represents one of the first comprehensive and scholarly attempts to describe the methods, concepts, and techniques of operations research, a field whose goal is to optimize multiple classes of processes in an organization. The approach offered a firm grasp of the common problems that arise out of multiple processes and provided an applied resource that details methodologies to address these problems and work towards an aligned, well-functioning system.

Process Level / Research Buzacott (1996), in "Commonalties in Reengineered Business Processes: Models and Issues," mathematically models nine assertions of superiority of a system using reengineered systems to assess their validity. Although he acknowledged that the models do not fully capture all the factors that determine system behavior, his detailed analyses showed that the reengineering principles, while not always valid in all situations, added great value in considering the appropriate way to structure processing systems.

Individual Level / Foundational Hackman and Oldham (1980), in Work Redesign, argued that a major influence on productivity is the relationship between employees and their jobs. The authors addressed how organizations can be designed, staffed, and managed such that employees are more fully utilized and satisfied, with neither the needs of the organization nor of the individual taking a dominant role. They argued that the more powerful tool is to redesign jobs to improve the *fit* between individual employees and their jobs.

Individual Level / Research In "Development of an Interdisciplinary Measure of Job Design", Campion and Thayer (1985) delineated different approaches to job design and their respective outcomes. Their Multimethod Job Design Questionnaire, a job design taxonomy and corresponding job outcome taxonomy, was created, tested and found to be reliable. The authors established that no *single* job design approach can fully explain all outcomes or show the HRD professional how to maximize individual design to support performance.

Capacity Variable

Organizational Level / Foundational A Theory of Growth in the Firm, by Penrose (1995), identified a general theory of growth in firms in response to the question of whether "there was something inherent in the very nature of any firm that both promoted its growth and necessarily limited its rate of growth" (p. xi). She presents an extensive, economically-based model dealing with questions of capacity, with capacity being interpreted as an organization's need to build and sustain leadership, capital, and infrastructure to achieve its goals.

Organizational Level / Research Govindarajan's (1988) study, "A Contingency Approach to Strategy Implementation at the Business-Unit Level: Integrating Administrative Mechanisms with Strategy," explores the alignment of strategy with administrative mechanisms. The results of the study provided empirical evidence that organizations must adopt a flexible approach to managing their business, tailoring their leadership, capital, and infrastructure to the needs of the individual business units, and ensuring optimization of the organization's parts.

Process Level / Foundational The Hays and Wheelwright (1979a) Matrix, in "Linking Manufacturing Process and Product Life Cycles," formalized the product/process relationship and highlighted the necessity of linking manufacturing with organizational goals to optimize the processes' capacity to perform. The foundation of the matrix is a set of statements about the conditions under which one particular configuration of manufacturing strategy is preferable.

Process Level / Research "Linking Product Planning and Process Design Decisions," by Kim, Ritzman, Benton, and Snyder (1992), employed mathematical programming to test several linkages between product planning and process design—two areas critical to a manufacturing process's capacity to perform. By modeling the impact of a system linking the product planning and process design versus one that does not, this research confirms that the success of a particular product or service design resides in the management of the total design process.

Individual Level / Foundational Human capability assessment is reviewed in Human Performance and Productivity, edited by Dunnette and Fleishman (1982). The focus is on assessment as the primary means of matching job requirements and individual resources. The volume offers a breadth and depth of knowledge about the characteristics of individuals that are indicative of a person's capacity to perform.

Individual Level / Research "The Managerial Performance Implications of a Developmental Assessment Center Process," by Englebrecht and Fischer (1995), found that developmental assessment had a positive impact on managerial performance and was still measurable after three months. This study shows that assessment centers are effective in assessing an individual's capacity, and that this assessment positively influences performance.

Motivation Variable

Organizational Level / Foundational Work Motivation, edited by Kleinbeck, Quast, Thierry, and Häcker (1990), "illustrates how theoretical concepts in organizational psychology are related to the

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solution of practical problems of work performance in organizations" (p. ix). This foundational synthesis examined issues of work motivation at two levels: 1) the fundamental motivational structures of achievement behavior and 2) the applications of research advances on motivation in the design of programs and systems to improve performance and organizational effectiveness.

Organizational Level / Research Petty, Beadles, Lowery, Chapman, and Connel (1995), in their article "Relationships Between Organizational Culture and Organizational Performance," found that organizational culture measures were significantly related to measures of performance.

Process Level / Foundational In "Process Innovation: Reengineering Work Through Information Technology," Davenport (1993) introduced his framework for process innovation. This work identifies change levers (technology, information, and human/organizational factors) as key enablers that influence, and are influenced by, the strategy and the process.

Process Level / Research In "Current Issues in Business Process Reengineering" (BPR), Maull, Weaver, Childe, Smart, and Bennet (1995) investigated components necessary for BPR success. From the data, six issues emerged that each company had to address at some point in the life cycle of the BPR project. The study empirically underscores the importance of information and human factors in a process intervention.

Individual Level / Foundational "Meaning, Self, and Motivation in Organizations" by Shamir (1991) reviewed current work motivation theories, discussing their shortcomings. He argues for a model of work motivation based on the relationship between self-concept and behavior. This theoretical contribution provided more solid understanding about what truly compels an individual's motivation to invest efforts in their work-role and job.

Individual Level / Research Petty, McGee and Cavendar (1984), in "A Meta-Analysis of the Relationships Between Individual Job Satisfaction and Individual Performance," examined the relationship between job satisfaction and job performance. Results showed that correlations between the variables were higher and more consistent than previous research had indicated and demonstrated a positive correlation between individual job satisfaction and job performance.

Expertise Variable

Organizational Level / Foundational Productivity in Organizations, by Campbell and Campbell (1988), focused on translating organizational goals to specifications for individual performance, which is directly linked to the need for an organization to establish and maintain policies and resources for selection and training. Two chapters are particularly relevant. First is a chapter advocating human resource allocation systems that establish selection systems to improve the match between worker characteristics and job requirements. Second is a chapter that developed a seminal training design model stemming from the question of what an individual must learn to be productive—that is, what kind of specific expertise must be learned to fulfill organizational goals.

Organizational Level / Research Lyau's and Pucel's (1995) article, "Economic Return on Training Investment at the Organizational Level," examined labor productivity returns from investments in training in manufacturing firms. Using multiple regression analysis that controlled for 14 other variables that might affect labor productivity, the researchers' results demonstrated a significant relationship between investments in training and labor productivity.

Process Level / Foundational Jacobs and Jones (1995) argued in Structured On-the-Job Training (OJT) that current economic demands have made employee expertise "a strategic necessity" (p. x) for organizational survival and that training processes must address the need of changing expertise requirements. The authors presented OJT as the most effective and efficient means through which employees' training needs can be addressed and thoroughly detailed specific processes for the design, delivery, and evaluation of OJT.

Process Level / Research A case study of a large truck assembly plant, "Unstructured versus Structured On-the-Job Training" by Jacobs (1994), addressed the issues of training efficiency and product quality and the comparison of the financial cost and benefits of unstructured versus structured OJT. This study found that structured OJT produced greater training efficiency and product quality and more has serious potential to more effectively meet the demands of changing processes.

Individual Level / Foundational Training In Organizations, by Goldstein (1993), provides a model of the training process within an organizational culture. He noted not only the need to identify training requirements, but the need to discern the organization and its climate, understand the trainee and his/her characteristics, and to build rapport with key organizational members. He also asserted that both the type of learning involved and the instructional event being considered must be clearly understood in order to choose learning procedures that ensure individuals have the knowledge, skills, and experience to perform.

Individual Level / Research "The Impact of Diagnosing Skill Deficiencies and Assessment-Based Communication Training on Managerial Performance," by Papa and Graham (1991), evaluated an organizational diagnosis program that assessed managerial communication skills followed by a needs-based communication training program. They found that managers who received the training had higher performance ratings over three long-term assessments than the managers who did not receive the training. This study confirms that individuals who have adequate knowledge, skills, and experience *do* perform more effectively.

Conclusion & Discussion

Swanson's (1994) Performance Diagnosis Matrix provides a diagnostic tool that can be used to conduct an organizational assessment towards the goal of improving organizational performance. It also provides an effective framework in which to research the theoretical underpinnings of elements posed in the enabling questions. These elements are useful theoretical knowledge, regardless of one's choice to employ Swanson's (1994) framework. For each of the cells, two pieces of scholarship were identified: (1) a foundational piece representing seminal thinking about elements of the enabling question and (2) a study that provides sound scientific research *about one aspect* in the enabling question.

In working with this model, empirical support for the enabling questions was found, but it should be noted that the nature of the research did not necessarily constitute a "perfect fit." Swanson's Matrix (1994) presents quite a few issues distinct from past scholarly work that should be pursued more specifically in future research.

In addition, our extensive research found little scholarly work about the process level of performance. Although there are many popular references regarding the topic, the following three issues are notable:

1. There is a lack of grounded research about process and its role in performance;
2. There is a lack of a cohesive concept that articulates the meaning of a process and its implications;
3. Much of the current popular literature discussing process is often, in actuality, information about reengineering, which is distinct from other process interventions.

It is suggested that future research focus on the process level of performance as an integral component of sustained organizational performance.

The purpose of this article is to explore the theoretical underpinnings of elements raised in Swanson's (1994) Matrix, rather than to support or critique it. However, it should be noted that a few of the questions posed by Swanson (1994) presented difficulty not only in researching, but also in conceptualizing about the meaning of the question. For instance, the question, "Does the organizational system provide the structure and policies supporting desired performance?," concerns systems design at the organizational level. Since policies are addressed as a component of the motivation performance variable at the organizational level (see Figure 1), there seems little need for policies to be addressed as a part of this question. In addition, the foundational piece and research uncovered during this study supports the focus of this cell remaining on structure.

It is helpful, too, if the HRD analyst approaches Swanson's (1994) Matrix with the ability to shift from past paradigms that may limit their understanding of the broader meaning undergirding the enabling question. For instance, the question at the systems design performance variable/individual level, "Does individual design support performance?," really asks the analyst to consider job design. "Job design" is a well-researched concept, whereas the concept of "individual design" may seem unfamiliar. The difference in understanding this enabling question could be a simple language disconnect. This difference points to a larger issue that HRD is currently facing: that is, the absence of an agreed-upon language for future research and application. Agreed upon language and conceptual understandings will ensure that future scholarship builds on past research and knowledge. This is integral to the maturation of HRD and its future effectiveness in contributing to the improvement of organizational performance.

Finally, a note about the *methodology* used to complete this study. The process of researching the theoretical underpinnings of a model, *any model*, is powerful. It is these researchers' hope that the power of the methodology will stand a part from one's choice to employ Swanson's (1994) framework. The implications and benefits of this methodology include:

- Through the acceptance that HRD is, by nature, an interdisciplinary field, HRD scholars and professionals can increasingly draw upon already existing research in these diverse disciplines. We can learn how to better access, understand, and apply this valuable research and knowledge to the field's challenges.
- Through the *first-hand* experience of knowledge and research in these respective disciplines, HRD scholars and professionals can increase their ability to develop their current thinking into new, and possibly, even more sophisticated theory.
- Through the identification of quantitative and qualitative research, models and organizing frameworks can be empirically supported. A common belief in the field is that HRD professionals and scholars intuitively know that the field's models and strategies are effective. However, there is little research stemming from the use of sound methods that validates much of HRD's contributions. The examination and use of grounded research will increase the credibility of the field and ensure a better dialogue between research and practice, a primary goal of HRD.

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An Exploratory Study of Significant Relationships and the Work Performance Styles of Peak Performers, Workaholics, and Average Performers

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While many factors that affect work performance styles (Peak Performer, Average Performer and Workaholic) have been identified by a large number of researchers, my research found the influence of relationships on work performance styles to be virtually unexplored and significant. I conducted in-depth interview with thirty subjects, identified by peers and/or supervisors as exhibiting proposed characteristics of one of these work performance styles. Two inventories were administered to provide supplementary information. The conclusions are striking.

The concept of peak performance has generated widespread interest since Garfield (1986)popularized the term in his book Peak Performers. While the human potential movement has focused on self-development strategies for some time, it is only recently that the business world has taken the idea and developed it as a strategy for increasing productivity in the work place. Through my counseling, teaching and management consulting practice, I have had long-term interest in and experience with individual growth and development.

My interest in peak performance was stimulated by success in facilitating clients and managers to modify their behavior to achieve peak performance in all aspects of their lives. In questioning what contributes to peak performance, it became clear that the importance of relationships had been overlooked in the academic and popular literature. Although some of the literature had indirectly suggested that relationships were influential, nothing in the research clearly linked relationships with peak performance. Thus, the research idea was born to explore these relationships of peak performers.

Kriegel and Kriegel (1984) have done extensive research in comparing peak performance to other work styles. These work styles are also referred to as performance styles in this paper. Kriegel and Kriegel (1984) outlined three performance styles or zones which were depicted as points on a continuum. Type C is peak performance and falls at the mid-point on the continuum. Type A, or workaholic style, and Type B, or average style, fall at opposite ends of the continuum. Type C style, or peak performance, is depicted as a balanced work performance style. This work style represents quality, without the harried, stressed negative side effects of workaholism.

Other researchers have examined the comparison between peak performance and workaholism (Garfield, 1986; Korn & Pratt, 1986). However, Kriegel and Kriegel's (1984) research was the only study that included average performance and presented the three styles in continuum format. Kriegel and Kriegel's findings paralleled my own experience with the exception of how relationships affect performance style.

From my professional experience, I theorized that all three performance styles were possibly influenced by their significant relationships. Underpinning each of the three performance styles were unique interpersonal characteristics which contributed to their manifestation. Thus, it was determined that further study was needed to explore this correlation between relationships and work performance styles.

Problem

The major research question of this study was two-fold: (a) how do intrapersonal and interpersonal relationships affect performance styles and (b) can the individuals within each of these performance styles create and tailor relationships to support and/or change their behavior?

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Peak performance has been explored in the existing literature from the vantage point of the individual's relationship with himself. Physical and behavioral strategies for improving performance have been proposed, including therapeutic approaches to improve self-esteem. However, no attempt has been made to establish a connection between peak performance and the individual's relationships with significant others. In looking at human performance, the individual is not isolated but is affected by the environment, including interpersonal relationships. Therefore, a study of how significant relationships influence work performance could make a significant contribution to the literature.

Purpose

The specific purpose of this study was to explore the following question: How do peak performers differ from average performers and workaholics in terms of their intrapersonal and interpersonal relationships? In examining existing theory on performance styles, it was determined that for purposes of this research, the following four types of relationships were most relevant to the study: (a) early influential relationships (parents, relatives, teachers, coaches); (b) work relationships; (c)spiritual relationships; and (d) the relationship with self.

An understanding of the concept of peak performance requires an expanded focus to include an examination of the reciprocal effects of significant relationships. Previous research has focused on mission, production, and team effort at best--but not on the reciprocal aspect of relationships. This research is directed toward exploration of the power of relationships in influencing work performance styles.

Methodology

No research has examined the relationships of peak performers and the linkage of those relationships to performance style. Therefore, the goal of this study was to begin to develop a theory that addresses the connection of significant interpersonal relationships and work performance styles.

Rationale for the Methodology For the purposes of this study, the interview approach was the most appropriate data gathering technique. Garfield justified the value of the informal interview as the most appropriate technique for eliciting information about a peak performer's work and accomplishments:

Formal question-and-answer interviews too often lead to conditioned cliches, particularly when the topics are such loaded ones as personal success and performance on the job.

The developmental nature of this type of research made it difficult to generate conclusions which were definitive statements. They were more accurately viewed as points of departure in understanding the dynamics of personal growth and development.

This research identified commonalities and differences among three sets of subjects consisting of peak performers, average performers, and workaholics. Specifically, this study focused on their relationships and how those relationships influenced their work performance style.

Selection of the Participants For purposes of this study, educators were chosen as subjects. Suburban educators from one geographical section of a metropolitan area were selected based on geographic proximity. As a former educator, my professional expertise and familiarity with the field was an advantage in analyzing the interview data.

There was no attempt to gain a random sample of educators for this study, since the primary criteria for selection was that the educators were reputed by their peers and/or supervisors to be peak performers, workaholics, and average performers and that they matched the characteristics for one of the three performance styles.

In order to obtain a sample of educators representing each of the three work performance styles (peak performers, workaholics, and average performers), educators, consisting of teachers of the year winners and/or administrative staff were contacted and showed a hypothetical list of characteristics of the three performance styles. Based on the recommendations of these people, letters were sent out requesting participation in the study. From responses, 10 peak performers, 10 workaholics, and 10 average performers were solicited.

The majority of the educators contacted replied that they would be willing to participate in the study. It was noteworthy, however, that the cooperation of the workaholics had to be solicited more persistently that the two other groups. Overall, the workaholics were harder to contact and schedule an interview with due to their busy schedules. At one point there was some concern about being able to get 10 workaholics to participate in the study because of the difficulty of scheduling.

Design Overview

The design called for an in-depth structured interview plus the administration of two inventories. The structured interview was considered the heart of the research, with the major focus of time and analysis concentrated on the interview process and data gathered. The inventories were considered supplementary or backup information either supporting or not supporting the interview data.

The Structured Interview An in-depth interview was conducted on the 30 subjects. The interview was scheduled, for the most part, at the educators' places of work, although a few were in the homes of the educators or at the researcher's office. The interview lasted approximately one hour and consisted of six in-depth questions which explored four general areas: early relationships, work relationships, spiritual relationships, and relationship with the self. The questions were asked in a consistent sequence and were open-ended in nature.

The Inventories Each of the 30 interviewees were given two inventories to complete and return to the researcher. The two inventories were the Coping Resources Inventory for Stress, CRIS, (Curlette, Aycock, Matheny, Pugh, & Taylor, 1988) and the Interpersonal Behavior Survey, IBS (Mauger & Adkinson, 1980). These inventories were chosen to look more closely at the behavioral processes pertaining to relationship issues.

The IBS has a relationship scale which measures three areas: shyness, dependency, and conflict avoidance. These were seen as relevant and complementary to the issues explored in the interviews. The CRIS examines coping measures for dealing with stress. Kriegel and Kriegel's (1984) research established an association between peak performers and their ability to deal with stress; therefore, it was determined that the CRIS would be an effective instrument to check for this possible association.

Conclusions

The conclusions of this research suggest that within each work-performance style there were similarities in background that probably were reflected in their work-performance styles. For purposes of this research, a conclusion was not stated within a particular work performance style unless the interview data showed concurrence for the majority of the individuals interviewed within that sample (6 or more).

Similarities Among Average Performers The backgrounds of the average performers were similar in a number of ways that may have influenced their average performance style. The average performers' families tended to be over-protective, encouraging them to be good kids and giving them the message that average was acceptable. They were not encouraged to take risks and/or make waves, but rather to be "good" within the context of few or no extremes, and to do what was right and expected, as projected by traditional values. This pattern of relating was revealed in the interviews as well as the inventories.

The average performers' work performance style revolved around avoidance and protection. They avoided conflict so that they did not have to deal with what made them uncomfortable. This behavioral strategy also protected their shyness and their fragile self-esteem.

Very early in their lives, the average performers began to move toward protecting their comfort and security, and moving away from what they did not like risk and challenges. They continued to exhibit this pattern in their adult relationships. Their significant others supported their performance style, as did their families while they were growing up. This was also reflected in their work environments.

Similarities Among Workaholics The backgrounds of the workaholics were similar in a number of ways that may have influenced their workaholic performance style. The research showed that workaholics also repeatedly avoided conflict. As the average performers protected their shyness, the workaholics were invested in maintaining their detachment. The interviews revealed that the workaholics mirrored an early family environment in which detachment had been modeled for them.

As children and youth, the workaholics made mature decisions without input from others who were sensitive to their needs. The workaholics' families did not seem available on an emotional level and did not elicit deep provocative thinking, expressing, or relating. The workaholics' current relationships likewise reflected this detached style of relating. As was the case with the average performers, the workaholics carried their superficial, harried, task-oriented relationship style over into their work performance style.

It was evident that the workaholics lacked spontaneity and avoided conflict in relationships. In terms of their work performance, the workaholics reported that they typically kept long hours and stayed busy with things and activities and did not spend a great deal of time with individuals in a personal way. In terms of their work, their detachment served them in that they were able to work to the point of burn-out, partly because their insensitivity to early stress signals propelled them to keep working, when it might be more viable to break the pace and rest.

This finding was in keeping with Korn and Pratt's (1986) contention that "new achievers" (peak performers) are able to deal with stress in a productive way, whereas "workaholics are characterized by stress and are prime candidates for depression and illnesses." Kriegel and Kriegel (1984) likewise use this analogy in describing the Type C profile as "peak performance under pressure without the debilitating effects of stress that rob us of our health and enjoyment of life" (p. xvi).

Workaholics, like average performers, protected their comfort zone in their work, but their comfort zone was staying busy. This work style originated from a desire to avoid the conflict of being, exploring, and deep introspection which they were very uncomfortable with. This was evidenced in their detachment.

Since many of the workaholics came from families that had absence or loss, this family situation may have contributed to their feeling handicapped in close communication and intimacy issues. Some of the workaholics referred to the fact that their families did not have a tendency to talk openly or do creative problem solving together. The workaholics implied that they received a subtle message that their parents did not want to be bothered with them.

The research also showed that the workaholics exhibited a high degree of denial regarding their workaholism. Schaef and Fassel (1988) described workaholism as an addiction to work which is subtly reinforced within organizations.

Similarities Among Peak Performers The backgrounds of the peak performers were similar in a number of ways that probably were reflected in their peak performance style. The results of this research indicated that the peak performers' early lives were filled with a broad set of experiences. They were encouraged to read, explore, express, wonder, think, and relate. The peak performers' families were characterized by a combination of firm limit setting and support. This finding was in concurrence with a study that linked high-achieving females with families who provided "strong emotional support for their achievement" (Williams & McCullers, 1983).

It was considered highly significant that the combination of discipline and support may have laid the foundation for the peak performance style that evolved with these individuals.

Where the family environment did not fit the model of providing loving support for natural exploration and expression, peak performers were able to bond to significant others outside the family who enabled them to express themselves and responded to their needs.

The peak performers were distinctive in life style and work style in that they exhibited a stress-reducing coping mechanism called reframing. Reframing is the ability to shift one's perspective from a possible negative situation to a possible positive one. This technique enabled them to tailor their feelings and actions if desired. It also enabled the peak performers to view life in terms of options, rather than from a helpless, limited choice perspective.

One of the most obvious and outstanding characteristics of the peak performers was their open, transparent authenticity. This may be attributed to the fact that they have been their real selves for so long, as their early environment encouraged and supported it.

There was evidence that the peak performers had a high level of self-confidence, which was in contrast to that of the workaholics or the average performers.

The peak performers' work performance style was in accordance with the literature on successful executives and organizations. Like the peak performers' home environment, Thompson (1983) stated that the most successful companies had "tough, but supportive environments." Furthermore, Glasgow (1980) profiled high-achieving managers as having relationships of trust, equality, and openness. This participative management approach among successful executives also concurred with Kriegel and Kriegel's (1984) description of the peak-performing Type C who demonstrated three consistent characteristics: commitment, confidence, and control. The peak performers in this study had relationships which matched those of the successful executives.

In summary, as in the other two groups, there was a dramatic similarity in the way the peak performers were related to growing up, how they currently relate, and how they perform, as peak performers.

Differences Among the Three Groups In comparing the average performers, workaholics, and average performers on the basis of their early relationships, it was noted that their interpersonal styles were not only influenced by their early family relationships, but also impacted the way they relate to others and their work performance style.

In this study the average performers and the workaholics did not experience relationships of acceptance and support in their families. This influenced them to adapt an interpersonal style that was shy and reserved. Furthermore, conflict in relationships was avoided to protect their shyness and inhibition. The peak performers, on the other hand, experienced early relationships that contributed to their fully expressing themselves. This style of relating in their early family environment was modeled in their open, expressive work performance style. Thus, the average performers, the workaholics, and the peak performers have tailored their adult lives to match the relationship patterns and the communication patterns of their early upbringing.

Implications for Human Resource Development

Training programs for managers and other employees, based on this research, could be helpful in increasing productivity as well as improving employee morale and satisfaction with their work. The approach should be two-fold: It should include programs that teach and coach individuals who want to change themselves and programs that encourage the organization to be supportive and to train supervisors how to coach employees who want to modify their behavior toward peak performance.

Managers in organizations need to become more aware of how relationships impact work performance rather than focusing exclusively on the quantity and quality of task-oriented behavior as it impacts productivity. A recent study (Kosodimos, 1989) suggested that this narrow focus within organizations leads to an organizational climate which promotes and encourages employees to be workaholics rather than peak performers. Imbalance in their lives is often costly for Workaholics and organizations as well. It may take a major crisis such as a heart attack or a marriage breakup to shock employees into facing the imbalance in their lives.

Managers must take a more active role in supporting and facilitating their employees to enrich their intrapersonal and interpersonal relationships and develop improvement strategies for average performers and workaholics that are tailored to their individual performance styles.

Management development programs could be offered to increase awareness of the different performance styles and how relationships can be influential. For example, trainers who teach management development seminars could focus on increasing managers' awareness of the different styles and how to approach them. In addition to awareness, strategies for change can be taught to both managers who act as coaches and individual employees who desire to move toward peak performance.

In order for organizations to encourage peak performance, they need to be more flexible and encourage individuals to lead balanced lives. This could be accomplished, for example, by providing more enrichment opportunities to employees. Such opportunities encourage employees to move toward peak performance, attract more peak performers to the organization, and help retain employees for longer periods of time.

To help organizations identify the three performance styles in prospective employees, and thus develop strategies for hiring and development, an inventory could be developed to assess a person's performance style. This inventory would also offer concrete recommendations for ways to tailor an individual's behavior from one performance style to another.

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Integrating Communication in Organizations

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Training and human resource development is one "voice" among many in organizations. It is critical to examine and coordinate formal training and development messages with the content and dissemination of other organizational messages such as employee communication, marketing, policies and procedures, and promotional communication to avoid information overload, communication gaps, and contradictory information.

As organizations of all types deal with increasingly fast-changing and complex products and services, more regulatory requirements, and internal and external audiences that demand prompt and complete information, most have experienced an increase in the number of messages and message-senders. New communication technologies such as voicemail, e-mail, desktop publishing, and Intranets, as well as a relatively popular and unquestioned assumption that "more communication and more training is better" have encouraged organizations to spend even more time and money on communication — including training.

In most organizations, however, the various "voices" of the organizations exist as "islands of communication" (Gayeski, 1993) — even when all of them are supposed to represent the organization's official viewpoint, policy, or style. And, in most large organizations, these various "islands" such as training and development, information systems, policies and procedures, employee communication, marketing, advertising and PR, are not only separate departments but they rarely coordinate their activities. It is this *dis-integration* of communication that we have found is causing major performance and morale problems.

Challenging Past Assumptions

Traditional models of communication practice (including public relations, instructional design, and employee communications) are based on a number of assumptions that are no longer valid (Gayeski & Woodward, 1996):

- Although they generally include audience and message analysis, traditional models of communication and instructional design practice assume that one type of well-designed intervention will solve the problem — be it training, promotion, or information-retrieval. They do not help practitioners determine what types of problems are potentially not solvable by these interventions, nor do they incorporate the other types of support that are generally necessary for any long-term change to occur. For example, employee communication and training systems may promote safe work practices, but if the work design and performance appraisal systems do not reinforce these messages, they are likely to be ineffective. The traditional linear models of communication analysis and message design reflect early linear models of communication: assume the "sender" crafts a well-designed message, the "receiver" will "get it". They do not reflect the complex interplay of interpretation and negotiation among all parties in a communicative situation, nor the impact of environmental and social influences.
- Conventional models assume that the client or requester has correctly identified the problem and the appropriate intervention — for example, that a performance gap is due to poor morale or that a two-day training course is needed. Traditional practice is reactive rather than proactive. Moreover, there is evidence that clients and sponsors often "do not ask us to deliver what they need; they ask us to deliver what they believe we can provide ... We do not do what we are not asked to do — improve human performance in the workplace" (Regalbuto, 1991, p.31).

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- Traditional communication practice measures the outcomes of communication projects by satisfaction indicators — how much the audience "liked" a meeting, newsletter, or course, or by readership or attendance statistics. These statements of satisfaction are assumed to relate to the effectiveness of an intervention in terms of organizational goals. Few models for evaluation actually link interventions to the "bottom line" (Kirkpatrick, 1994).
- Finally, the typical training and management of professionals in the various "islands" of communication does not encourage them to learn about each other or to cooperate. They each manage messages only within their own domain, and have little interaction with other "communicators". Furthermore, in the current environment of uncertainty and downsizing in many organizations, these individual departments are competing with each other for budgets, headcount, and credibility with management.

These assumptions are creating a number of problems that we have observed in organizations and are actually causing communication and training departments to contribute to *decreased* rather than *increased* performance.

Snapshots of Dis-Integrated Communication

The development of the concept of "dis-integrated" communication in organizations was prompted by several of the author's consulting engagements within a variety of different organizations. In each case, top management had identified that apparently well-designed training, management messages, or other types of formal communication were not achieving the desired results. In the ensuing analysis of each situation, one common factor emerged: a lack of awareness of and coordination with other organizational initiatives and messages. Some short "snapshots" of case studies illustrate this concept:

- The communications department of a healthcare organization sent out a letter over the CEO's name appealing to its employees for donations to its research fund; this letter arrived in employees' mailboxes on the same day that human resources sent out an announcement that their benefits package would be cut. The cynicism and ill will that was caused by this mis-timing not only caused the research fund drive to fail but it caused problems in getting employees to accept the new benefits package and painted a very poor picture of the CEO. More than a year later, this incident keeps being repeated as an example of how "unfeeling" and "out of touch" the organization is towards its employees — the very *opposite* of the values and desired message of the management leaders.

- One major Canadian bank found that quite literally if its branch managers read and responded to all the memos, held meetings to discuss new policies as directed, and engaged in training programs that were requested of them and their staffs, that in some months there would be *no hours left to do the work of the bank*. Branch managers also reported that performance of some tellers actually dropped after training; the apparent cause was their being overloaded with too much detail and too many facts which was causing them to "freeze up" on the job.

- An insurance company was challenged with having to continually increase the length of its training courses for new customer representatives to the point where trainees spent eight to twelve weeks in the classroom before they worked their first hour on the job. This caused major staffing problems since in effect, new customer representatives were only available about three times a year, after the training courses were completed. A major source of what was perceived to be "training problems" was that the public relations and recruiting "voices" of the organization were painting an inaccurate picture of the customer representative job position, and the wrong people were being attracted to the position. Furthermore, a lack of coordination between the policies manual used by the customer reps and the communication sent to providers' offices caused many difficult and seemingly unresolvable problems for reps to handle. This caused dissatisfaction and stress, and increased turnover, further exacerbating the problem.

- In a large restaurant chain, we found that managers were being sent such a large volume of print, e-mail, voicemail, and other media that they could easily spend four hours a day doing nothing but processing this material. Because their jobs did not allow for such a time expenditure, they were ignoring at least half of it; the problem was that in this fast-growing company, inexperienced managers didn't know what half to ignore and were making costly mistakes. Because headquarters staff knew how hard it was to get managers' attention, they often sent voice mail to announce that an e-mail had been sent, only to follow that up with the same message in print and another voice-mail reminder. Naturally, this situation repeated hundreds of times over amounted to unacceptable information overload.

The Role of Human Resources in Integrating Communication

In most organizations, there is no single person or department charged with integrating, or harmonizing communication within the organization. What does this integration involve?

- developing a set of values, philosophies, and styles of communicating with internal and external audiences and ensuring that all formal communication that represents the "voice" of the organization adheres to them;
- coordinating the dissemination of messages and programs so that audiences have the time to process them and so that they don't overlap in awkward ways;
- developing consolidated information sources — instead of having dozens of newsletters, memos, and other communication, related information can be grouped together and distributed in a more holistic way, be it through a daily e-mail news update, a set of Intranet pages, or on a bulletin board;
- making sure that employees hear news and product information before their customers do and that they understand the marketing messages being sent to their customers;
- ensuring that all the "islands of communication" run from standard platforms and have a similar set of goals and objectives

There are a number of possible approaches to engineering the previous activities. The healthcare organization discussed above has recently combined the formerly separate departments of audio-visual, staff development, and human resources into a new "human and organizational development" department with an advisory team comprised of members from corporate communication and information systems. The corporate communication team has received a mandate from the corporation's leadership to adopt a formal system of integrating communication within the organization and they are now developing management tools to do so. The restaurant chain mentioned previously hired a new manager of corporate communication who has a strong training and new technology background. They re-framed the position description and this person is now charged with developing ways to streamline communication to the individual sites. The bank developed a "change management calendar" which allowed the policies and procedures department to document major planned announcements and training activities several months ahead of time and to coordinate their dissemination.

Entirely new job titles and descriptions are being crafted. For example, Millbrook Distribution Services has recently created a position of Chief Learning Officer with a small staff of communication, graphic arts, media production, and instructional design specialists. The Chief Learning Officer at Millbrook has stated, "Management of the formal communication processes of the organization as part of the Chief Learning Officer's responsibilities is believed to be a leading edge innovation... In times of non-stop change, it is essential to bridge the traditional 'islands of corporate communication' such as training and development, employee communications, public affairs, corporate media, documentation, library systems, policies and procedures, and advertising and marketing to create integrated, consistent, and coherent messages to stakeholders". Coca-Cola has also created a similar position of "CLO" (Willis and May, 1996).

Since employee communication and training functions typically are situated within human resources departments, it seems reasonable to suggest that HR professionals take the lead in establishing a framework for integrated communication within their organizations. A simple picture of the typical state of "dis-integrated" communication is presented in Figure 1 below. Various message-sender departments produce and disseminate messages and other informational programs that are sent out to receivers. Since commonly there is more information disseminated than can be digested by receivers, each receiver sets up his or her own filter for what is attended to at all, and then what is believed and remembered.

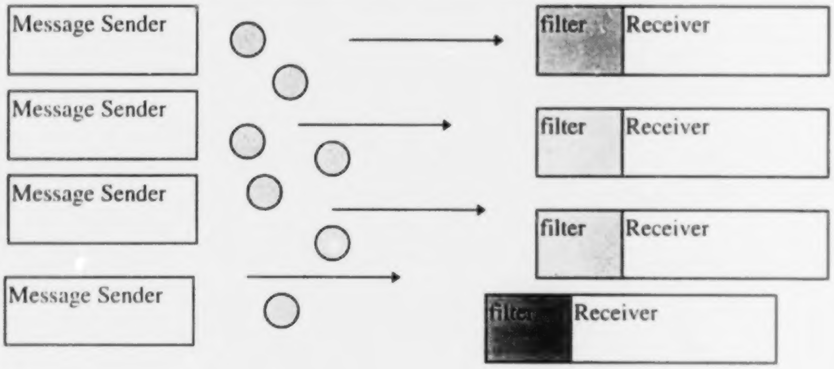

Figure 1 Dis-integrated communication

By contrast, an integrated communication system coordinates and harmonizes messages from various senders. This system, composed of various rules (policies, procedures, formats, etc.) and tools (distribution channels such as newsletters, company Intranets, planning documents and calendars) ensures that messages are coordinated in terms of facts, styles, and distribution timelines. Instead of each person trying to build his or her own "filter", the system pre-filters information and makes it available in the forms most useable by each receiver. (See figure 2).

It is important not to construe this function as a "gatekeeper" or inhibitor of a free flow of information throughout an organization. Additionally, this concept does not apply to informal interpersonal communication — its function in fact is to *enable* more spontaneous interpersonal communication by reducing the load and dissonance of uncoordinated *formal* and *mass distributed* messages.

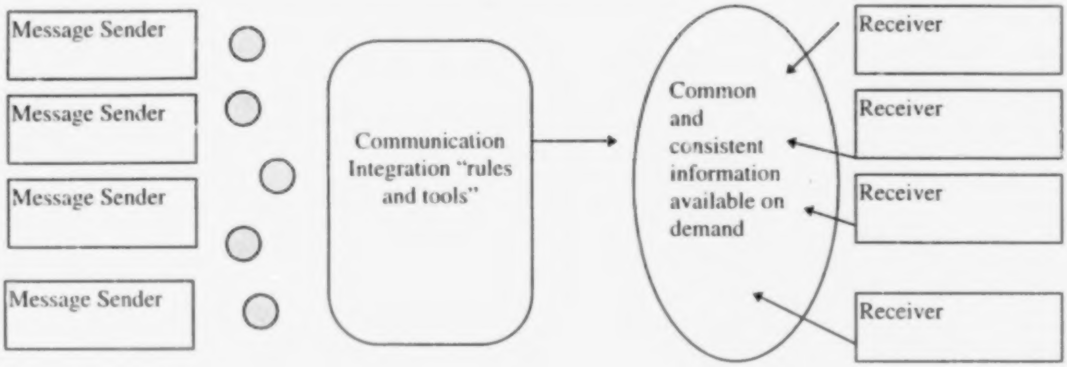
Message Sender
Message Sender
Message Sender
Message Sender
Communication Integration "rules and tools"
Common and consistent information available on demand
Receiver
Receiver
Receiver
Receiver

Figure 2 Integrated Communication

As human resources and training move towards a "performance consulting" (Robinson & Robinson, 1995) or "performance technology" (Stolovitch & Keeps, 1992) model and are pressed to be more accountable for showing measurable return on investment, the management of formal communication becomes a more important role to assume. If, as we have seen from our action research, many people in organizations are spending one-third to one-half of their time processing information (and still not keeping up), it is easy to recognize the enormous amount of corporate resources being spent on this activity. Additionally, it is not difficult to build a case for the importance of crucial information "getting through" to the right people in a streamlined manner. In several of the author's projects, management has quickly seen that even modest efforts in integrating communication could save several million dollars within a year, not to mention avoiding many potentially expensive and embarrassing mistakes due to communication inadequacies.

How to Begin the Process

Although of course there is no one best way to begin the process of integrating communication, in the author's experience each organization that has successfully addressed the problem in under two years has taken these steps:

- top management has identified a need to better manage communication and learning;
- at least one professional in the area of human resources, training, corporate media, or employee communication has stepped forward with an interest and at least some previous awareness or training in this area;
- a strategic planning team was convened that represented members of various departments that were communication-senders and typical audience members along with at least one outside resource or mentor;
- the strategic planning team had input and encouragement from outside colleagues;
- the strategic planning team piloted at least one model intervention within six months of their charge

A number of new technologies are spurring the initiation of integrated communication, particularly Intranet (internal Web) sites. When a whole set of organizational messages are consolidated in one place, it becomes easy to see where information conflicts and where users would naturally expect "links" among related topics, even if they come from different departments.

In some cases, integrated communication was initiated because although it was technically easy to "post" Web pages, no one in the organization could decide who was to "own" the Intranet site or who was authorized to add to and update it. Because of the current interest in new technologies, information systems departments are sometimes being looked to as potential managers of organizational communication. For example, the primary topic of discussion among managers at the recent national conference of the Communication Media Manager's Association in October 1996 was the relationship between communication professionals and information systems professionals. In some organizations, what had been the province of employee communicators, human resource policy professionals, and trainers is now being taken over by information systems departments.

The time is right for human resources professionals to take a leadership role in managing what may be the most important and most costly function within organizations — communication. By critically challenging old assumptions and facing the true costs of communication overload, human resources professionals have the potential to help their organizations become more humane and more effective places to work.

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LMX Theory, Personality Type, and Management Development [1]

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This paper reports the results of a study on the similarities and differences in personality type, as outlined in the theories of Carl Jung and Isabel Myers, and its relationship to perceived quality of leader and subordinate interactions. Although it has been documented that different types of exchange relationships develop between leaders and members, previously there has been a lack of research attention given to the developmental process. This study suggests that organizations should develop their leaders to promote understanding and usefulness of personality differences in work groups. Initiatives that HRD professionals can take to develop managers to maximize the human resource of their work team are also suggested.

The primary purpose of this research was to address an identified gap in theory and research on leader-member exchange (LMX). Specifically, little theory and almost no research has directly addressed the question of how leader-member relationships develop in work teams, despite a theoretical base emphasizing the role-definition process (Burns, 1995). Research on the relationship of the leader and individual members of work teams has neglected personality variables although early theorists considered this topic important. By tracing LMX theory back to its roots of role theory (Kahn et al., 1964; Katz & Kahn, 1966) this researcher noted that the concept of personality was mentioned briefly and then slighted. Kahn and his colleagues (1964) studied personality in the context of reaction to role conflict and role ambiguity. Katz and Kahn (1966) addressed personality by pointing out that human complexities are simplified in organizations through the mechanism which they termed "partial inclusion."

In early LMX research, personality was not addressed at any length when studies were conducted on the role formation process of leaders and work group members. Researchers did not address it because they believed that good instrumentation was lacking. (Burns, 1995) Therefore, this present study was designed to address that gap by testing the proposition that personality type, as proposed in the theories of Carl Jung and Isabel Myers, is associated with the development of LMX quality.

Methodology

Subjects. An "availability sampling" approach (Keppel, Saufley, Jr., & Tokunaga, 1991, p. 17) was used in this study. All subjects attended a major university located in metropolitan Atlanta. The *MBTI*, Form F, was administered to 148 potential subjects approximately 2 weeks prior to the experiment during several different graduate and undergraduate classes. From this subject pool, 10 groups of 8 members each were formed based upon each group membership including two undergraduate members each of the ST, SF, NF and NT personality types. In addition, 10 students enrolled in graduate courses in human resource development, business, urban studies, or teacher education served as leaders. The 10 graduate student leaders each represented

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[1] **This paper is an adaptation of the doctoral dissertation of the author.**

one of the four different personality types. The result was 80 leader-member dyads for this research, distributed over the following three possible dyad types:

1. Matched	Leader and members had exactly the same type.
2. Mismatched	Leader and members had opposite types, for example, NF leader and ST member.
3. Mixed	Leader and members matched on only one dimension, for example, NF leader and either SF or NT member.

Of the 80 leader-member dyads in this research, 20 were matched (25%), 40 were mixed (50%), and 20 were mismatched (25%) in relation to leaders.

Instruments. Instruments used in this study were the *Myers-Briggs Type Indicator*, Form F, 166-item version (Briggs & Myers, 1976), the *Negotiating Latitude Scale*, 2-item version (Dansereau, Graen, & Haga, 1975; Graen & Cashman, 1975), and the *In-group/Out-group Measure* (Duchon, Green, & Taber, 1986; Heneman, Greenberger, & Anonyuo, 1989).

Treatment. A simulation work exercise was used as a treatment, the *NASA Moon Survival Task* (Hall, 1989). This exercise asks participants to imagine that they are part of a space crew that has crash landed about 200 miles from a rendezvous site. Group members are told that survival depends upon reaching the Mother Ship at that site and that only 15 items of equipment were not destroyed in the crash. Subjects work individually and then as a group to rank order the 15 items in order of importance to survival.

Procedure. Group leaders, prior to the experiment, were instructed by the experimenter on how to conduct four rounds of interactions with group members, the first three interactions were one-on-one with members, the fourth was with the total group. The 10 group leaders and groups were identified and taken to a "work" area. The work simulation was conducted. It took approximately 1 1/2 hours. Then the *NL-2* scale and the *In-group/Out-group* measure were administered at the end of the treatment.

Hypotheses and Data Analysis

Six sets of alternative (research) and null hypotheses logically flowed from the way in which types of leader-member dyads were set up. The research hypotheses were as follows:

1. Members in matched dyads will report being allowed greater negotiating latitude than will members in mismatched dyads.
2. Members in matched dyads will report being allowed greater negotiating latitude than will members in mixed dyads.
3. Members in mixed dyads will report being allowed greater negotiating latitude than will members in mismatched dyads.
4. There will be a greater proportion of In-group members from matched dyads than from mixed or mismatched dyads.
5. There will be a greater proportion of members in the Middle-group from mixed dyads than mismatched dyads.
6. There is a positive relationship between Negotiating Latitude scores and group status.

Hypotheses 1, 2, and 3 were tested (in null form) using Analysis of variance and planned comparisons. Hypotheses 4 and 5 were tested (in null form) using the Chi-Square statistic. Hypothesis 6 was tested (in null form) using analysis of variance and correlational procedures. Additionally, although no hypothesis was stated, the measures of LMX used in this study and the nomination of in-group or out-group status were subjected to correlational analysis to determine to what extent they were related. In all tests a .05 level of significance was used.

Results

With Negotiating Latitude used as the dependent variable and type of dyad used as the independent variable, an analysis of variance yielded a significant F ratio. This finding meant that overall LMX quality varied significantly according to dyad type, as had been conjectured. However, when the planned comparisons were done, hypotheses 1 and 2 were supported, but hypothesis 3 was not.

Results from the analysis of variance are presented in Table 1. As shown in Table 1, overall LMX quality varied significantly according to dyad type (F = 11.7588, df = 2, p < .0000).

Table 1

Analysis of Variance of LMX Quality by Dyad Type

Source of Variation	Sum of Squares	df	Mean Squares	F	Significance of F
Between	30.4125	2	15.2063	11.7588	.0000
Within	99.5750	77	1.2932		
Total	129.9875	79			

The means and standard deviations for LMX quality and dyad type are presented in Table 2.

Table 2

Means of Scores Reported by Members on the NL-2 Instrument Measuring LMX Quality

Dyad Type	N	Mean	SD
Matched	20	7.500	.6070
Mixed	40	6.375	1.1477
Mismatched	20	5.800	1.2827

Chi-Square analysis yielded statistically significant values providing support for hypotheses 4 and 5 although small numbers in some cells suggest that these results be interpreted with caution. Results are presented in Tables 3 and 4.

Table 3

Chi-Square Results for Group Status by DyadType as Reported by Members

	In-group		Mid-group		Out-group	
Dyad Type	N	%	N	%	N	%
Matched	12	60	4	20	4	20
Mixed	18	45	19	47.5	3	7.5
Mismatched	8	40	5	25	7	35

Pearson X^2 (4, N = 80) = 10.44737, $p < .033$

Likelihood Ratio X^2 (4, N = 80) = 10.36209, $p < .034$

Table 4

Chi-Square Results for Group Status by Dyad Type as Reported by Leaders

	In-group		Mid-group		Out-group	
Dyad Type	N	%	N	%	N	%
Matched	11	55	7	35	2	10
Mixed	14	35	23	57.5	3	7.5
Mismatched	4	20	9	45	7	35

Pearson X^2 (4, N = 80) = 12.04200, $p < .017$
Likelihood Ratio X^2 (4, N = 80) = 11.02672, $p < .026$

Both the analysis of variance an the correlational analysis that were conducted in relation to hypothesis 6 yielded statistically significant values, thereby supporting hypothesis 6, although correlations were weak to moderate.

Results from the first analysis of variance are presented in Table 5. As shown in Table 5, overall NL-2 scores varied significantly according to group status as reported by members.

Table 5

Analysis of Variance of NL-2 Scores by Group Status as Reported by Members

Source of Variation	Sum of Squares	df	Mean	F	Significance of F
Between	19.9086	2	9.9543	6.9543	.0017
Within	110.0789	77	1.4296		
Total	129.9875	79			

The means and standard deviations for NL-2 scores and group status as reported by members are presented in Table 6.

Table 6

Means of NL-2 Scores for Each Group

Group Status	N	Mean	SD
In-group	38	6.8947	1.2690
Mid-group	28	6.5000	.9230
Out-group	14	5.5000	1.4544

Results from the second analysis of variance for Hypothesis 6 are presented in Table 7. As shown in Table 7, overall group status as reported by leaders varied significantly by NL-2 scores.

Table 7

Analysis of Variance of NL-2 Scores by Group Status as Reported by Leaders

Source of Variation	Sum of Squares	df	Mean Squares	F	Significance of F
Between	17.7737	2	8.8669	6.0822	.0035
Within	112.2538	77	1.4578		
Total	129.9875	79			

The means and standard deviations for NL-2 scores and group status as reported by leaders are presented in Table 8.

Table 8

Means of NL-2 Scores for Each Group

Group Status	N	Mean	SD
In-group	29	7.1034	1.1447
Mid-group	39	6.2821	1.1459
Out-group	12	5.8333	1.5275

To test null hypothesis 6 in a different way a Spearman Rank Correlation was conducted. The correlations between the NL-2 instrument, Leader's ranking of members, and each member's ranking of themselves were all significant (p = .001). The coefficients are shown in Table 9.

Table 9

Spearman Correlation of NL-2 Scale With Leader and Member Ranking of Group Status

	N	Spearman Correlation Coefficient	p value
Member Ranking	80	.3674	.000
Leader Ranking	80	.3792	.000

Conclusions

Conservatively, the following three conclusions can be drawn from this study. First, personality type seems to influence LMX development, and rather quickly. This conclusion seems reasonable given the support found for Hypotheses 1, 2, 4, and 5. Role theory, (Kahn et al., 1964; Katz & Kahn 1966) the theoretical underpinning of LMX theory, suggests that personality, or the compatibility of style or preferences between a leader and member, may be a complicating factor in role development in an organizational setting. This study supports these authors' views.

Second, different LMX instruments may yield different results. While both major measures of LMX used in this study (NL-2 and the In, Mid, Out-group status measure) revealed differing amounts of negotiating latitude in leader-member dyads and the actual classification of members into different groups, the correlation between the two measures was weak to moderate. The third measure that was used, Duchon, Green and Taber's (1986) procedure of asking group members to rank each other, had a negative correlation with both leader rankings of members and member's self rankings and no significant correlation with the NL-2 instrument scores.

Third, further research in this area is needed to confirm these initial findings. The need for research devoted to developmental processes that contribute to LMX quality is clear in the literature (Burns, 1995). Because the LMX construct of negotiating latitude is based on perception, the current study employed only the two perceptual scales of the Myers-Briggs personality typology. However, when one returns to Role theory, (Kahn et al., 1964; Katz & Kahn, 1966) the theoretical base of LMX theory, roles are referred to not as perceptions, but as patterns of behavior. Other MBTI scales (Extrovert/Introvert, Judgment/Perception) deal with outward behavior. Based upon interaction found in this study, and the theoretical underpinnings of LMX theory, research should move forward from perception and begin describing the behavioral components in the initial development of the LMX relationship as well.

The current research employed what Graen and Scandura (1987) would probably call a laboratory/psychometric design. They pointed to a need for LMX research designs that are part qualitative and part quantitative. Therefore, this researcher recommends that the current study's design be expanded by using a combination of testing and observation. Observation of the leader-member dyad and interactions should be attempted to explore how a personality disposition as defined by the Myers-Briggs typology translates into role making behavior in the leader-member dyad.

Implications for HRD Application

In considering the antecedents and results of this research, the researcher is struck by the finding that personality--which is orderly, consistent, and perhaps largely nonchangeable--appears to contribute to the quality of a leader-member relationship. The findings of this study, if substantiated by further research, could lead to new theories for designing and conducting several types of HRD programs. The results, if confirmed in field studies, could mean that leaders and work group members with similar combinations of personality preferences share the same kind of perceptions and have a better chance of success at a good working relationship. If so, then organizations should avoid the assumption that the complexities of human participants can be simplified or ignored.

Selection and Related Training. First, the researcher will address the area of selection where one might erroneously attempt to hire only one personality type or only those candidates who are similar. It is important to beware of the trap of classifying one personality type as the most desirable type, with the resultant stereotyping of its characteristics. Rather, each person should be viewed as an individual; each dyad of manager and subordinate as unique. In planning hiring strategies or putting work groups together, one must keep in mind that since each type contributes unique characteristic strengths, differences in type can be an asset to an organization because they help people to do and enjoy different kinds of work. More than one management style is effective; different employees and managers respond to different treatment. Additionally, diversity is a salient issue for today's workforce, and developing the flexibility to deal with each person as an individual is an implied aspect of personality typology.

However, when one combines different types of leaders and members, the leader-member exchange relationship can run into difficultly. As shown in this study, opposite kinds of perception lead to lower quality LMXs and these relationships can lead to ineffective organizational outcomes. Managers and HR personnel may need new training in selection procedures. While honoring the strengths of diversity, selection strategies should be combined with management development strategies affording managers the opportunity to learn how to capitalize on the strengths and develop the "blind spots" of new subordinates and team members. Management development and team building programs should then be modified to be less of a one-size-fits-all approach.

Training Interventions. Graen and Cashman (1975) suggested "awareness" of the vertical dyad linkage can enhance team-building exercises. However, training programs based on the lower levels of Bloom's Cognitive Taxonomy are probably not enough for either half of the dyad. It may be beneficial to design training in steps in the affective domain of learning (Krathwohl, Bloom & Masia; cited by Cranton, 1989) with the characterization level as the goal. There are additional program implications for training in communication skills and conflict resolution strategies.

Organizational Support. As with all HRD programs, awareness raising and team building training must be supported in the workplace in order to be effective. The leaders of the organization must be open and looking for tools to help them deal with problems and they must pursue particular goals and be willing to commit resources.

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Frameworks for Choice of Management Development Methods

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Descriptions of management development methods largely focus on the proposed virtues of the particular method, and how it is used. There has been no substantial published overall study or research on the purposes for which particular methods are best suited. This paper proposes that methods should be assessed on Four Frameworks - Impact on Knowledge, Skills, Insight; Congruence with learning theories; Relevance to Learning to Learn; Congruence with Learning Styles.

Articles and books about particular methods of Management Development more often appear to be works of advocacy rather than analysis. They most frequently describe the virtues of the method, and how it is used. Where descriptions of particular features which the method may be especially good at developing are offered, they tend to focus on knowledge and skills, and to generalize descriptions of why a particular method may work, such as "creates interaction", or "offers real experiences". This paper proposes that a focus on how to make a method work effectively omits the crucial preceding step of identifying why the method should be chosen at all. As Peter Drucker identified for us years ago, it is the difference between efficiency - doing something well, and effectiveness - doing the right thing. Those authors who have attempted to summarize strengths and weaknesses of a method (see for example Rothwell and Kazanas, 1993) provide a useful quick guide, but lack in depth of analysis, and coverage of some of the most relevant issues.

There are few references to any learning theory to explain why a particular method might suit specific needs, only a few very generalised references to whether a method does or does not suit individual preferences about how to learn (Learning Styles), and none that this author can trace on the potential of the method for learning to learn. The focus on a preference for describing "how to", as distinct from "why", is revealed for example on the Case Method, which is so widely used in Business Schools. Barnes, Christensen, Hansen (1994) say "we do not have a good way of understanding or evaluating how people learn". Given the period over which case studies have been used and the money poured into writing them, this is a revealing statement. The word 'we' may however be an appropriately modest word, since it is the purpose of this paper to show that it is possible to assess how people learn.

Definitions

Huczynski (1983) identified 303 'teaching and learning methods'. In fact many of these could be contained within a recognizable 'family'. 16 methods as shown in the Frameworks are reviewed here. Method is defined here as "the specific means through which learning is acquired by individuals".

Many different definitions of learning or development have been produced. One most appropriate to reviewing methods is :

Learning has happened when people can demonstrate that they know something they did not know before (insights and realizations as well as facts) and/or when they can do something they could not do before (skills) (Honey & Mumford 1995).

The term "Framework" is used here to denote a regular structure through which methods can be assessed.

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Problem Content

The literature on management development methods is dominated by enthusiastic descriptions of how a method was used successfully, with helpful advice about the strategy and tactics involved in using case studies, business games, outdoor or adventure training. Since there is very little about why a particular method was chosen to meet particular needs, it is not surprising that there has been no substantial review comparing one method with another. Very little is written about how the success of a method may be related to any learning theory. While promotional literature may emphasize nowadays the supposed contribution of programmes to 'learning to learn', in-depth analysis of why a particular method might contribute to this is not provided. Finally, there is a tendency to generalize about the suitability of a method for a particular purpose as if all learners are equally likely to learn from it. The proposition of this Paper is that the choice of a method can be made more systematically. The effect of this would be likely to be that tutors would spend less time doing perhaps very well what they should not be doing at all. Four Frameworks are proposed to assist more effective choice. (The detailed analysis supporting the conclusions in the Frameworks is contained in Mumford (1997).

Framework 1 - Knowledge, Skills, Insights

Methods are employed as answers to particular problems or opportunities :

Knowledge -	"Managers need a better understanding of the value chain model."
Skill -	"I need to have a way of improving interviewing skills."
Insight -	"As an American, two or three experiences in different European countries have shown the importance of culturally determined behaviours."

Which method is most likely to be most effective in dealing with such needs?

Framework 2 - Learning Theories

Unlike the Harvard authors quoted earlier, this author contends that quite a lot is known about how managers learn. The implications of particular learning theories for specific methods, however, has not previously been analysed in detail. This means that the choice of a method is not apparently related to the circumstances in which it will work, for which kind of learning, and for which type of learner.

Framework 3 - Learning to Learn

The idea that management education and training programmes facilitate 'learning to learn' (Deutero Learning) has become a cliche of providers' brochures. Very little has been written to indicate how programmes actually attempt to improve learners' ability to learn. It seems likely this is a missed opportunity. Some methods contain a wider range of experiences and therefore more learning to learn opportunities than others.

Framework 4 - Learning Styles

Learner A may learn very well from a role play, and Learner B much less. Since this can occur with individuals who, in other respects, in terms of needs, current situation, particular tutors, have been exposed to the same experience, the conclusion is that one kind of learner likes role plays and another does not. In the last twenty years this midly helpful conclusion has been developed into a theory and methodology for identifying individual learning styles.

Methodology

Literature was reviewed to confirm this author's speculation that very little has been written about 'why' as compared with 'how'. It was further discovered that existing analyses focused on whether a method was good at developing Knowledge or Skills. The Frameworks presented here were developed as a result of reviewing what additional analyses could help in selecting the right method. The four Learning Theorists were selected as those most frequently mentioned in management development literature.

The Content of the Four Frameworks

Framework 1 - Knowledge, Skills, Insights

While "competence" has become a favoured word in management development in recent years, this breakdown provides more specific guidance. Insight may be an unfamiliar description - "attitude" has often been used. Insight better captures issues about perceptiveness, wisdom, the sudden recognition of how things fit together - the 'Ah-ha' effect. No attempt is made in the Framework summaries to distinguish between different kinds of knowledge and skill; this is done in the detailed analyses (Mumford 1997).

Framework 2 - Relationship to Learning Theories

Malcolm Knowles (1985) - His theory of "Andragogy" - Adult Learning - includes:

- the learner comes with experience that means that with many kinds of learning, adults are themselves the richest resources for one another;
- adults are ready to learn when they have a need to perform more effectively a task, solve a problem or live in a more satisfying way.

Reg Revans (1982) - Though less well known in the United States, Revans' identification of Action Learning as a major propellent for the development of managers is of major significance. Crucial aspects include:

- the difference between two types of learning: P (Programmed Knowledge) and Q (Questioning Insight)
- problems, opportunities or tasks involving responsible action are the essential vehicle for learning
- people working in groups on problems support and challenge each other.

David Kolb (1984) - His version of the Learning Cycle (a sequence from Concrete Experience through Reflective Observation, to Abstract Conceptualization and finally Active Experimentation) provides a powerful and usable description of how people learn. His major accompanying innovation was the development of a model explaining how individuals may differ in their willingness to learn at different stages of the Cycle - Learning Styles.

Chris Argyris (1982) - He has constructed three different though linked major theories. He distinguishes between Single Loop and Double Loop Learning. The first is designed to correct mistakes and error as defined by current policies, objectives and rules. In contrast Double Loop Learning describes what can be learned by questioning those policies and rules. In Espoused Theories Versus Theories In Use he brings out the difference between what people say guides their action, and what actually guides their action. His third theory, Defensive Routines, explains the way in which individuals are prevented from asking the questions which might enable them to learn.

Pedler's Typology of Learning (1978) is used to distinguish between Cognitive, Affective, Interpersonal and Self-Knowledge as types of learning.

Framework 3 - Learning to Learn

Each method is considered on whether it has the potential to contribute on a wide or narrow basis to Learning to Learn.

Framework 4 - Learning Styles

This Framework uses the Honey & Mumford Learning Styles Questionnaire; it is technically more reliable and has a more direct correlation with issues about methods than does the Kolb LSI. The LSQ defines four Learning Styles, summarized very briefly below. The statements apply to those individuals shown by their score against norms to have a strong preference for that style of learning. They are likely therefore to react either very favourably or unfavourably to a particular method.

Activists - like learning from new experiences and problems, enjoy here and now methods such as business games, role playing. Like being thrown in at the deep end, and prefer to be involved with other people. They dislike passive learning experiences, solitary work and being asked to review their experiences.

Reflectors - like to collect data, to observe, and to analyse and review. They dislike being thrown into things without thought or planning and being rushed or placed under time pressure.

Theorists - demand learning drawn through systems, models, concepts and theories. They want to question assumptions and logic and to be intellectually stretched. They dislike being faced with relatively superficial techniques or methods, and tend to avoid or discount methods emphasising emotions and feelings.

Pragmatists - demand an obvious link between the subject matter and a problem or opportunity in the work they do. They are interested in techniques so long as they are seen to be relevant, and seem to provide immediate opportunities for application. They dislike learning which seems to be concerned with general principles or is associated with other situations, organizations or environments quite different from their own.

Other Comments

There are a number of other factors which might influence the acceptability and effectiveness of a particular method, including Gender, National Culture, Organizational Culture and Age. Unfortunately there is very little specific information on these issues, certainly not enough to construct Frameworks at this time.

An Oxford University philosopy paper was supposed to have posed the following question :
"All generalizations are untrue. Discuss." It is certainly the case that George Orwell in 'Animal Farm' wrote "all animals are equal, but some animals are more equal than others". It should be remembered that the generalizations contained in the summary frameworks should be treated with caution, and must be supplemented by a detailed review (Mumford 1997). The ratings attributed to each method should be reviewed by readers, who could produce their own ratings.

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FRAMEWORK 1. Management Development Methods

	SUITABILITY FOR:		
	KNOWLEDGE	SKILLS	INSIGHTS
AT WORK			
COACHING	A	A	B
MENTORING	A	B	A
MANAGER DEVELOPER	A	A	B
THROUGH THE JOB	A	A	B
OFF THE JOB			
ACTION LEARNING	B	B	A
CASE STUDY	B	A	B
DISTANCE LEARNING	A	B	C
LECTURE	A	C	B
OUTDOOR	C	B	B
READING	A	C	B
ROLE PLAY	C	A	A
SIMULATIONS	C	A	A
TECHNOLOGY BASED TRAINING	A	C	C
VIDEO - TALKING HEAD	A	C	B
VIDEO - CASE/DRAMA	B	B	B
OTHER			
GROUP LEARNING			
- ABOUT GROUPS	A	A	A
- OTHER LEARNING	B	B	A
LEARNING REVIEWS	C	A	A

NOTE:

1. RATING SCALE
   A = MOST SUITABLE FOR
   B = MODERATELY SUITABLE FOR
   C = LEAST SUITABLE FOR
2. GENERALISATION
   The limitations of generalisations are exposed here. What kind of Knowledge? Which Skills? But these issues are discussed in the relevant Chapter.
3. GROUP LEARNING
   Wide range of possible contexts (eg. real work groups, temporary 'teams' on courses).

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FRAMEWORK 2.
Relationship of Management Development Methods to Learning Techniques

	Knowles	Revans	Argyris	Kolb 1	Kolb 2	Cognitive	Affective	Inter Personal	Self Know-ledge
AT WORK									
COACHING	A	C	C	A	A	C	B	B	A
MENTORING	A	C	C	A	A	C	B	B	A
LINE MAN--AGER AS DEVELOPER	A	A	C	A	A	C	B	B	A
THROUGH THE JOB	A	A	B	A	A	B	B	B	B
OFF THE JOB									
ACTION LEARNING	A	A	A	A	A	B	A	A	A
CASE STUDY	A	C	B	A	A	B	C	B	C
DISTANCE LEARNING	C	C	C	C	A	A	B	C	C
LECTURE	C	C	C	C	A	A	B	C	C
OUTDOOR	B	C	C	A	A	C	A	A	A
READING	C	C	C	C	A	A	C	C	B
ROLE PLAY	B	C	C	A	A	C	A	A	B
SIMULATIONS	B	C	C	A	A	C	A	A	A
TECHNOLOGY BASED TRAINING	C	C	C	A	A	A	C	C	C
VIDEO									
- TALKING	C	C	C	C	A	A	C	C	C
- CASE/DRAMA	B	C	C	C	A	B	B	B	C
OTHER									
GROUP LEARNING									
- ABOUT GROUPS	A	A	A	A	A	C	A	A	A
- OTHER LEARNING	A	A	A	A	A	C	A	A	A
LEARNING REVIEWS	B	A	A	A	A	B	C	C	A

NOTE:

1. RATING SCALEA = STRONG LINK
B = MODERATE LINK
C = WEAK LINK
2. 'Knowles' - refers to at least one of major elements in Knowles theory.
3. 'Argyris' - refers to Double Loop Learning.
4. 'Kolb' - refers to: 1) Learning Cycle fully available
2) Influence of Learning Styles on acceptability of method.

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FRAMEWORK 3.
Management Development Methods and Learning to Learn

	POTENTIAL	VARIETY	TYPES OF LEARNING			
			Cognitive	Affective	Inter Personal	Self Knowledge
AT WORK						
COACHING	A	A	C	B	B	A
MENTORING	A	A	C	B	B	A
LINE MANAGER AS DEVELOPER	A	A	C	B	B	A
THROUGH THE JOB	A	A	C	B	B	A

OFF THE JOB						
ACTION LEARNING	A	B	B	B	B	B
CASE STUDY	B	C	B	C	B	C
DISTANCE LEARNING	C	C	A	B	C	C
LECTURE	C	C	A	C	C	C
OUTDOOR	A	C	C	A	A	A
READING	C	C	A	C	C	B
ROLE PLAY	A	C	C	A	A	B
SIMULATIONS	A	C	C	A	A	A
TECHNOLOGY BASED TRAINING	C	C	A	C	C	C
VIDEO						
- TALKING HEAD	C	C	A	C	C	C
- CASE/DRAMA	C	C	B	B	B	C

OTHER						
GROUP LEARNING						
- ABOUT GROUPS	A	A	B	A	A	A
- OTHER LEARNING	A	A	C	A	A	A
LEARNING REVIEWS	A	C	B	C	C	A

NOTE:

1. RATING SCALEA = STRONG LIKELIHOOD
   B = MODERATE LIKELIHOOD
   C = LOW LIKELIHOOD
2. For this Chart Learning to Learn is assessed on :
   - potential to identify how to learn by self and others
   - variety of learning experiences involved
   - areas/types of learning.

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FRAMEWORK 4.
Management Development Methods
Congruence with Strong Learning Styles
Preference of Learner

	ACTIVIST	REFLECTOR	THEORIST	PRAGMATIST
AT WORK				
COACHING	C	A	B	A
MENTORING	C	A	B	A
LINE MANAGER AS DEVELOPER	C	A	B	A
THROUGH THE JOB	A	A	A	A
OFF THE JOB				
ACTION LEARNING	A	B	B	A
CASE STUDY	B	B	B	B
DISTANCE LEARNING	C	A	A	B
LECTURE	C	A	A	B
OUTDOOR	A	B	C	B
READING	C	A	A	B
ROLE PLAY	A	A	B	A
SIMULATIONS	A	B	B	B
TECHNOLOGY BASED TRAINING	C	A	B	B
VIDEO				
- TALKING HEAD	B	A	A	A
- CASE/DRAMA	C	B	B	A
OTHER				
GROUP LEARNING				
- ABOUT GROUPS	B	A	A	A
- OTHER LEARNING	B	B	B	B
LEARNING REVIEWS	C	A	A	A

NOTE:

1. RATING SCALEA = STRONG CONGRUENCE
B = MODERATE CONGRUENCE
C = LOW CONGRUENCE

2. Through the Job — The ratings here propose that each style is strongly congruent with some features of this Method (though they may miss the full benefits open through other styles).

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Effectiveness of 360-Degree Feedback on Management Development from the Recipient's Perspective

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What influences managers to accept or deflect 360-degree feedback in a management development program? What influences their change decision process toward deep versus superficial change? Feedback recipient interviews revealed how the processes work over time. Developmental dialog with staff or peers led to deep, resilient change. Source credibility was important. Relationship changes from feedback-seeking were associated with perspective transformation. Some broadened their perspective and changed assumptions, suggesting that 360-degree feedback can lead to development beyond skill-building.

Management development programs often seek to foster perspective changes: how managers understand their work, their roles with others, and their attitudes about change and control (Akin, 1987; Burke, 1994, Kets de Vries, 1989; Nadler & Tushman, 1990; Rhinesmith, 1993). To achieve such change, some programs employ 360-degree feedback, in which managers receive a report on how their boss, peers, and direct reports view their managerial behavior (Clark & Clark, 1990; Zimmerman, 1993). The effectiveness of this approach is documented by a few quantitative studies (Hazucha, Hezlett, & Schneider, 1993; Edwards, 1990; Fruge & Rollins, 1993) and by testimonial and anecdotal data from those who have experience with such feedback (Corporate Leadership Council, 1995; Kaplan, 1993). However, there has been a lack of systematic study of how the phenomena of 360-degree feedback relates to profound change, or how and why it can be effective.

This study sought to discover how the experience of 360-degree feedback works, from the recipients' perspective. More specifically, it identified and described what influences recipients of such feedback to accept it, what guides them to change deeply, and what makes the change durable. The approach was qualitative, generating insights from intensive interview data from several managers who had recently experienced 360-degree feedback in a management development program at a high technology firm. The findings extend previous research in new directions by describing in depth the experience of several managers who changed and by proposing a theory of how the process actually works within their context.

Literature Themes

Several literatures provide insights on how the 360 degree feedback process operates: empirical work on feedback from the late 1970s to 1980s, later extended to 360-degree feedback in particular; Industrial/Organizational Psychology work on change; and writings from adult learning on perspective transformation.

Ashford and Cummings (1983) proposed two types of feedback-seeking behavior, monitoring the environment and direct inquiry, with costs and benefits of each. The present study found other important benefits to direct inquiry: it was associated with relationship-building, increased trust, and a developmental dialog that led to a partnership that was associated with perspective change. When the manager's attitude toward direct reports allowed openness to direct feedback, the traditional perspective of control was altered.

Guidelines exist on how to give feedback, without specifying the special case of 360-degree feedback. Huntsberry (1994) cautions that mis-used multi-rater instruments can lead to self-doubt when the feedback was strongly negative and mistrust of colleagues when feedback was

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never fully accepted as valid. Baron (1988) suggested criteria for constructive feedback: specific, considerate, and without attribution of poor performance to internal causes. Lawrence & Wiswell (1995) summarized the literature on feedback by suggesting that effective feedback has three key characteristics: specificity, empathy, and inquiry.

While some organizations use 360-degree feedback for performance evaluation, there was a clear and exclusive development focus in the study reported here. London (1993) reports that one-third of raters in one study would have raised the ratings for their peers and bosses if salary decisions had been affected. Bernardin, Hagan, & Kane (1995) suggest that peer managers in a retail organization may have colluded to improve scores when such feedback was used for performance appraisal.

Antonioni & Keenan (1992) found differences in reaction to 360-degree feedback by source (superiors, peers, staff), with greater surprise at negative feedback from staff. They also predicted that a negative response to feedback would be driven by credibility of the feedback source. This finding may also be explained as an instance of fundamental attributional bias and its effect on managers' decisions explained by Wiswell and Lawrence (1994). Their research suggests a different causal direction, that source credibility may be driven by the nature of the feedback.

Some sources in the literature on 360-degree feedback have suggested that face-to-face corroboration of the feedback increases its impact on the receiver (Edelstein & Armstrong, 1993; Kaplan, 1993; Carton, 1994). The present study found that when that face-to-face contact was extended to a partnership in a developmental dialog, then the feedback receivers gain both important support to continue new behaviors and a changed relationship with the feedback givers.

Kluger and Denisi (1996) offer a historical review of feedback literature from the Industrial/Organizational Psychology perspective, and propose a feedback intervention theory. They report several mechanisms to reduce gaps between the feedback performance level and the standard, which parallel the approaches reported in other literatures: change the behavior, change the standard, reject the feedback, or escape the situation. They also propose a model hierarchy of attention to feedback, grouping it into meta-task processes involving the self, task-monitoring processes, and task-learning processes. They propose in their feedback intervention theory that feedback at the lowest level impedes skillful performance, and that feedback at the highest level is likely to have affective responses. This suggests a parallel to Argyris' (1994) work on defensive communication norms which avoid feedback and prevent learning..

Hellervik, Hazucha, & Schneider's (1992) five stage Integrated Behavior Change Framework provides a good overlay to the research results from the I/O Psychology perspective. This study adds a dimension of illustration and extension to that model at each phase.

Table 1 Integrated Behavior Change Framework.

Framework Element	Related Findings
Assessment/Needs Analysis	Cases in this study were eager for assessment information in feedback-starved environment
Assignment of Behavioral Standards	Cases sought dialog about surprising feedback, moved from assignment to collaborative definition
Intention Formulation and Protection	Cases varied in commitment to change; this research found that the most profound and successful change was guided by a rich feedback dialog with peers and direct reports. Developmental dialog with direct reports and peers begins with feedback clarification discussion. Changes in self- or role perspective affected depth & durability of change.
Behavioral Expression in Change Environment	Initiative in pursing a development dialog with peers and direct reports. Development dialog was a critical factor at this stage, moving the focus of change from individual to collaborative effort.
Generalization and Maintenance of New Behaviors	Development dialog affects several areas, positively or negatively: • Trust • Communication • Momentum to continue change

The research also adds detail and instance to some literature of Adult Learning. Mezirow (1994) suggests that the urgent need to understand the meaning of our experience is central to adult development, and that we do so by striving toward viewpoints that are more inclusive, discriminating, and integrative. This was specifically reflected in one manager's realization that "working hard is different from challenging your basic assumptions, or challenging your basic framework of how you operated." His/her "sense of complacency" before the management development program was shaken by *load* (workload and 360-degree feedback results concurrent with a sports injury), perhaps leading to the realization that "As a manager, it can't be [fairly easy]... the new attitude that I think came out of this course is that it's NOT going to be easy, that you were going to have to constantly challenge [yourself]."

Kegan's levels of adult development (1994, 1986) were also exemplified in this research. In cases where there seemed to be a changed perspective, part of that change was to see more possibilities, to look at situations from the others' points of view, to mentally switch roles with others, and to view issues as complex. In response to a question about seeing issues as black and white versus shades of gray, a manager in the study said, "I've got more damn gray about me now than I *ever* had!" Three of the five primary cases in this study seemed to operate at Level 4 within Kegan's taxonomy, at which autonomy and interdependence balance, choice of framework becomes available, and the world no longer looks simple.

Where the research adds value specifically to the works of Mezirow, Kegan, and others is that these cases were responding within their work context to a *planned* critical moment. Such an experience was for some what Mezirow (1990) calls a "disorienting dilemma," a trigger event that forces new meaning. The responses to a deliberate critical moment are the heart of the research, and the variety of experience in dealing with it from the adult development perspective elaborates how some adults will consciously seek to develop new perspectives. Within this research, those who sought to develop a different perspective through developmental dialog achieved their goal.

Research Procedures

A group of 84 middle managers were engaged over two program years in a management development program at a high technology corporation. The managers participated in various program modules and learning teams, and received 360-degree feedback using the Profilor instrument from Personnel Decisions, Inc. The managers attended feedback sessions to process their report data and engaged with their learning teams in development planning. From these meetings, initial determinations were made about if and how the participants seemed to be changing.

A pool of 15 participants was purposefully selected to be interviewed. The basis for selection was to find several who had changed most, several who had changed some, and several who had not changed. The design included five from the first program year (1993-1994) to interview at 22 months after 360-degree feedback, and eight from the second program year (1994-1995) to interview twice, at approximately 4 and 8 months after the 360-degree feedback. After the initial interviews from the second program year, two more were added and interviewed once at 6 months, to correct an imbalance by finding cases who exemplified the absence of change. In all, 24 interviews, from 45 minutes to 2 hours in length, were conducted.

The interviews were transcribed, a subset of five cases was selected as exemplifying the phenomena of interest, and their interview data were analyzed in depth. The five cases included

- one who clearly experienced a perspective transformation and enthusiastically sought to accelerate the change, in and out of work;
- one who experienced a revelation of expectations about managerial work, struggled to persuade his/her team to believe in the change, and eventually succeeded in becoming a very different kind of manager;
- one who approached the experience cautiously because of a bad prior experience with such feedback, and changed little;

- one who got contradictory feedback from two bosses and tried to reconcile both with experiences of success; and
- one who exemplified feedback-seeking behavior leading to an approach to managerial work that was profoundly different from his/her early career.

These five cases provided the necessary richness and contrast about the processes of understanding and accepting feedback, what influences the depth of change, and what influences its duration.

The approach to analysis followed guidelines from Strauss & Corbin (1990) and Miles & Huberman (1994). The interview data were coded using a constant comparative method to systematically notice similarities within and across interviews, and to build a description in terms of concepts, processes, phenomena, dimensions, and locations within dimensions. Qualitative research software (The Ethnograph v4.0) made this detailed analysis of nearly 10,000 lines of text possible. After coding and recoding to reconcile and build concepts across interviews, various tables and displays were used as interim analytical steps. These tables were then used to fuel cross-case searches on codes linked to phenomena of interest as the research evolved.

The data products from searches on most major concepts, and especially those linked to the original research questions, were analyzed on a cross-case basis. From the cross-case analysis against the research questions, the findings emerged.

Review of Questions and Summary Findings

The research explored the managers' experience from the framework of three research questions, listed as subheadings below, and found answers that went beyond the scope of the questions.

What processes influence recipients' initial acceptance or deflection of 360-feedback? The research produced a list of factors and a description of their interaction based on the experience of several managers. The important factors of feedback credibility, source credibility, feedback history, and feedback norms interacted in interesting ways: strong negatives in any factor made feedback acceptance very difficult, while moderate challenge to established feedback norms actually increased commitment to the process.

After the feedback, what influences the development decisions about the content of any change and the commitment to that change? The research indicates that a *developmental dialog* with direct reports and/or peers, which clarifies mutual expectations, builds support for change, and establishes a continuing source of feedback, seems to be present and important in cases where there was deep, lasting change versus change at the skill level only.

As a change effort is attempted, what influences participants' continuation of the change? The research found that in some cases, the developmental dialog helped managers achieve a different perspective on their work, even on themselves, and that this redefinition seemed to bring resilience. The research also found that organizations may undo the intended development of a 360-degree program by increasing time pressure, stress, and organizational uncertainty, and by reducing organizational credibility.

Findings

Just as 360-degree feedback sometimes achieves message clarity by providing views from different perspectives, in order to fully represent the findings, four views are presented below: sequential phases, individual, relationships, and organizational.

Sequential phases Findings from before, during, and after the 360-degree feedback and development experience are presented as the first view.

From *before* the feedback is received, *feedback history* has an effect on how 360-degree feedback will be received; specifically, where an individual had prior negative experience of seeking feedback directly or with instruments, that individual may experience early deflection or misinterpretation of feedback messages. One manager's prior experience of getting a multi-rater assessment from a new and hostile group led him/her to take an extremely cautious, literal, narrow interpretation of the feedback message meanings, and to challenge and question the credibility of the instrument, the raters, and the process. More generally, where the *feedback norms* are to withhold any negative feedback or give no feedback at all, there may be unreasonably great expectations. In a feedback-poor environment, 360-degree feedback may be a deluge in a desert.

Results from the period *during* the feedback indicate that while participants are receiving 360-degree feedback and planning what to do with it, *change-support* (sharing ideas, building support networks, establishing some accountability with direct reports or peers) increases feedback acceptance, and distractions of *load* (increases in workload, stress, time pressures) are usually unhelpful both at the moment of acceptance or deflection and beyond.

From the period *after* the feedback and development planning, the need for *change-support* continues and increases. Those who set up and nurture a *development dialog* with direct reports and peers seem to gain both support and changed relationships.

Individual Individual perspectives contain several factors that contribute to making an individual *ready* for 360-degree feedback: a sense of adequate security to take risks, a managed level of stress, and cognitive maturity played a role for the cases in this research.

Adequate sense of *security* to take risks manifested itself as one contrast between the cases that changed more (1 and 2) and those that changed relatively less (3 and 4). One manager voiced no concern over security, and in fact explicitly mentioned "So except for the fact that I already had too much to do, my environment was very conducive to experimenting, to taking the time if I had it to do these things."

A managed level of stress also seems connected with greater benefit from 360-degree feedback. While all managers may routinely seem to experience high stress, those who are dealing a life transition (divorce, death of parent, marriage, birth of child, etc.) should perhaps defer this experience. Of the original 15 persons interviewed, at least three were going through such transitions and were not among the five cases selected for extensive examination; however, they consistently reported setting aside the feedback during the transition and returning to deal with it when they were able.

Cognitive maturity refers to the level of adult cognitive development referenced above. Those cases in this research who seemed to grow most also showed a high interest in stepping outside themselves and reflecting on what they were doing, how others saw them, what their essential roles were. The cases who changed relatively little spoke often in dualistic terms, seeing their world as more clearly contrasted as right/wrong.

Relationships The Relationships perspective showed that seeking feedback is not a neutral act in a relationship: depending on how the communication is handled, feedback seeking and giving can do harm or good in a relationship. This research found, repeatedly, that the cases experienced the feedback as having the effect of focusing their discussions on what had been undiscussable, which led to more or less trust as an outcome.

A critical moment seems to come in the relationship between a feedback recipient and rater(s). The conversation after the feedback is an opportunity for disclosure that seems to build the relationship by becoming somewhat vulnerable.

When the relationship aspects are handled well, it can lead to a *new relationship*. One manager engaged a boss in a mutual development dialog, both seeking and giving feedback; he/she reports that it has made a large positive difference for both. Another used the 360-degree feedback process as an opportunity to establish a new relationship with a distant peer, who became a mentor. Another describes the improved relationships and ability to communicate about difficult issues with direct reports, and also cites the powerful impact the support of a learning team had in reaching the changed attitude. Another describes an important peer who provided trusted counsel through troubled times.

Organizational The Organizational view of the findings shows that 360-degree feedback has a large impact on the time, energy, and motivation of those who touch it. And once touched, it sticks -- that is, when organizations commit to 360-degree feedback, it is watched closely as a symbolic corporate act.

As the feedback follow-up is important in building relationships between individuals, it is also important for the relationships between individuals and the collective organization. Just as trust can be damaged by inaction when feedback is exchanged between individuals, the same trust and credibility factors apply.

There may also exist a threshold of *organizational uncertainty* that will undermine the efforts to implement a 360-degree feedback process. In this research, where uncertainty was greater, change was smaller ; however, for one case organizational uncertainty was very high and his/her readiness to change overcame worrying about the organization.

Implications for HRD Practice

From this research, some recommendations emerge to guide practices of organizations that would implement a 360-degree feedback program.

Manage support for the process and participants before, during, and after. The trust damage when support is offered and then withdrawn can be large. This may mean visible, durable organizational support, and the increased trust in the organization may be well worth it.

Keep a relationship and development focus embedded in the program structure to maximize effectiveness. In management development programs, encouraging and training participants to form learning groups and to establish developmental dialog within their "back home" environment may be critically important. In this study, that relationship-building aspect was strongly present in all cases where profound change occurred, and nearly absent in cases where the change was superficial. Some specific interpersonal communications training may be appropriate to support this dialog.

Be wary of the wrong organizational moments to start a program like this: during this research, there were RIFs and massive restructuring. The climate of organizational turmoil had an eviscerating effect on trust in the organization, which seemed to reduce the motivation to grow and develop among some managers in this study.

A potential use of 360-degree feedback other than for development is in performance evaluation. This use should be considered with great caution because the data may be biased and the candid developmental dialog, which is fueled by trust, could be compromised if an element of gaming enters the process. Moreover, when feedback information is made available to supervisors, negative dynamics of deflection and discounting may increase.

Implications for Future HRD Research

This research suggested several directions for possible future studies.

What is the relationship (if any) between post-formal cognitive development and how recipients understand 360-feedback? This qualitative research, within its limits, observed that those who begin to see more possibilities, develop the ability to step outside of themselves to see issues from other perspectives, who become reflective, critical learners, seem to integrate their feedback more fully into their behavior. Those who speak in dualistic terms and remain convinced of "one right answer" seemed to approach the feedback with less understanding and a narrow skill focus. Do those who have achieved more cognitive maturity understand and respond to the feedback experience differently?

What is the relationship between cognitive maturity and participation in a developmental dialog? This research suggests that they are related: those who actively participated in developmental dialog, with openness to others' feedback, seemed to gain some ability to reflect differently on their work, their roles, their selves, and seemed to achieve a higher level of cognitive development. Future studies might confirm this in other contexts, or look for an empirical link.

How might developmental dialog be encouraged in an organization? This study found that where feedback recipients focused on support through dialog with direct reports and peers, the change was greater. Future research might examine whether such benefits hold true in other organizational contexts, how such structures for support might be organizationally encouraged, and if specific interpersonal skills training can have an enhancing effect on the quality and use of dialog.

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Bridging the Training Gap: Identifying Work Place Transferable Skills Needs in Manufacturing Organizations in East Central Minnesota

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This study reports on the results of one work place education program in rural Minnesota where significant formative findings and insights have resulted regarding the nature of the training needs among the participating organizations, the expectations of the production-level trainees, the experience of program staff, and lastly regarding the nature a private/public collaboration. These results contribute to the better understanding of the requirements for successful job skills programs, and pave the way for improved program planning and implementation.

The role of an educated and trained workforce for the economic well-being of individual organizations and the country as a whole has received much attention over the past 15 years. Beginning with reports of declining high school students' scores on standardized test in the early 1980s (National Commission on Excellence in Education, 1984), many of the recent school reform efforts have focused on providing students and employees with the skills, knowledge, and attitudes required to perform in a fast-paced, rapidly changing technological economic environment.

Research has shown a clear correlation between the employees' level of basic workplace skills and their productivity in the workplace. Increased workplace basic skills lead to more instances of employees using reading and writing on the job, higher employee participation in meetings, employees asking more questions and making more suggestions, improvements in job attendance and safety, and significant gains in supervisory ratings (for a summary: Bergmann, 1995)

Estimates of the percentage of employees with insufficient levels of basic skills range from 20 to 40% (Bergmann, 1995; National Center for the Educational Quality of the Work Force, 1995), and this problem is expected to worsen as new labor market entrants will come increasingly from economically disadvantaged populations who traditionally have had poor success in school and inadequate access to formal education (Hull, 1991). As a result vocational educators and business owners alike have become involved in workplace-based basic and/or transferable skills programs. According to the annual industry training report, a nation-wide survey of over 13,000 private organizations in the United States (Training, 1995), one-third of companies' training budgets $17.3 billion in 1994- is spent on training for production workers, service workers, and administrative employees. Thus, one in five organizations with 100 or more employees provide basic skills training, and this training is focused on the three "Rs": basic math (40% of companies providing training), Writing (37% of companies), and Reading (37%). Twenty seven percent of companies also provide training in English as a Second Language (Training, 1995).

Given the size of the training effort and the scope of the problem of insufficient skills among the incumbent workforce, measures to identify the skills gap, provide the requisite education and training, and improve public education as a feeder system for future workforce entrants. The literature contains a number of reports on basic skills needs assessment projects, for instance in the mining sector (Cole, 1994), among manufacturing employees (McKeag, 1993), and among carpenters, joiners and construction workers (McKeag, 1994).

This study reports on the results of one such workplace transferable skills program in rural Minnesota. The project, begun in the fall of 1995, is currently in its second year, and has moved beyond the needs identification and assessment phase into the implementation stage of training. While the summative evaluation of the project will occur once the project is completed, significant

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formative findings and insights have been produced that focus on: (a) the nature of the training needs among the participating organizations, (b) the expectations of the populations of trainees, (c) the experience of program staff, and (d) the nature of private/public collaboration. These formative results, perceived from the vantage point of the external evaluators to the project, contribute to the better understanding of the requirements for successful job skills programs and pave the way for improved program planning and implementation.

Project Overview

The Human Resource Development Partnership Project (HRDP) is a collaboration between a Technical College in East Central Minnesota, a group of local manufacturing organizations, the Minnesota Job Skills Partnership (a division of the state's Division of Trade and Economic Development), and staff at the University of Minnesota. The HRDP is a direct result of activities initiated by the East Central Minnesota Labor Force Committee and subsequently, by joint efforts with the Manufacturer Educational Committee in the area The major objectives of the project were to identify the job functions, assess the level of present workforce members, to modify present curriculum to meet the needs of business and industry, and to provide training to current and future workforce members. The rural setting context added significance to the project. The vast technological changes in American business and industry have been well documented, as have the resulting need for a new educational paradigm with a "system of credentialing that communicates real information no matter where the learner is in age, educational level, or geographic location" (Ferguson and Maxey, 1976, p. 4). If these needs are pressing for urban settings, they place even greater burdens on rural areas that are characterized by low population density, a preponderance of single industries, and lack of access to the educational opportunities typically available in metropolitan settings. In contrast to other rural areas in the state, however, East Central Minnesota, because of its proximity to the metropolitan Twin Cities areas, is expected to experience the fastest rate of growth in Minnesota's six regions in six of eight occupational groups, and in manufacturing employment in particular. Nearly three-fourths of manufacturing job growth will be in durable goods industries, especially lumber and wood products, electronic equipment, and fabricated metal products. The demand for adequately skilled workers, however, is expected to outpace population growth rates in this region. While demographic information shows a 51% increase in the labor force demands between the years 1990 and 2010, the population of East Central Minnesota is expected to grow at the slower rate of 42% during the same period (East Central Minnesota Labor Force Committee, 1996). Against this background, the HRDP was initiated and a project vision focused on "developing partnerships to identify, create, develop, and maintain a qualified labor force for East Central Minnesota" was developed. The project was formally inaugurated at a grant signing ceremony in September 1995, when a grant from the Minnesota Job Skills Partnership was awarded jointly to the local Technical and Community College for training and development of six participating local businesses which, in turn, had pledged varying amounts of direct and in-kind contributions to the project.

Description Of Participating Businesses Six small, family owned businesses participated in the HRDP with a total workforce of 412 employees. The number of participating workers in individual businesses ranged from less than 20 to 150 employees. The participating businesses, located within a radius of 50 miles from the Technical College, are in the light manufacturing metal or plastics fabrication industry, and enjoy a high level of familiarity, openness, and collaboration with one another, despite the fact that several compete directly with one another. The job classifications of the potential trainees included welders, tool-and-die makers, machinists, and related jobs. The group consisted of 354 present and 58 new employees and apprentices. Hourly wages for these jobs ranged from $6.00 to $17, with an average pay of $9.96 per hour (excluding premiums and overtime pay).

Project Implementation: Communications

Early on in the project, leadership recognized that the success of this project, which involved multiple stakeholders over a large geographic area, depended on timely and effective communication and sharing of relevant information. This was assured in a number of ways: regular, bimonthly breakfast meetings, organized by Technical College staff and attended by participating and prospective new employers, college staff, state representatives, and the external evaluators served as the most formal and visible forum for disseminating information,. These meetings provided project updates, answered questions and addressed concerns as they arose during implementation of the project. Project staff were in systematic, ongoing formal and informal communication with the participating business owners and their employees. The external evaluators provided quarterly informal and biannual formal project status updates, providing feedback and formative evaluation overviews to project leadership and the sponsoring state agency regarding both the implementation process (such as adherence to the implementation schedule, need for revisions of project plan), and the quality of the implementation as assessed through stakeholder interviews, surveys, and other formal and informal means.

Assessing Stakeholder Needs And Expectations: Business Owners Early on, this project's leaders committed themselves to a broad-based needs assessment approach, systematically involving and gathering information on the needs of three major stakeholder groups: employers, employees/trainees, and project staff relative to the implementation of the HRDP. Only an approach that balanced the expectations of each group considered appropriate. Although an initial assessment had been conducted during the planning stage of the project, and was indeed the basis for the project plan, a more extensive assessment was conducted during the implementation phase of the project. This included determining the needs and expectations of business owners and employees and identifying critical gaps in employees' abilities to perform as expected on their jobs.

In order to identify the expectations of participating employers, a roundtable discussion meeting was convened by the external evaluators shortly after the beginning of the project. These businesses' Chief Executive Officers (CEOs) were asked to identify the project's critical success-related factors and to envision the end state of a successful HRDP. Table 1 lists the expectations specified by the business owners, which, not surprisingly addressed primarily competitive issues related to the economic positioning of their businesses through enhanced performance of their employees.

Table 1
Employer Objectives for Training (ranked by frequency), N=5

1.	Increase gross profit
2.	Increase productivity
3.	Reduce rework/reject rate
4.	Increase job satisfaction
5.	Reduce turnover
6.	Improve flexibility of workforce
7.	Improve quality of decision-making processes
8.	Improve collaboration and motivation
9.	Improve product quality

Not surprising, given the small to moderate size of participating businesses, only the most fundamental accounting data were available and being collected on a regular basis at the time of project start-up. A major challenge to the effective evaluation of the project, therefore, was the development and implementation of key performance indicators that would allow the owners and evaluators to measure changes associated with the project. In some instances, such as worker turnover rate, data were readily available and could be obtained without difficulty. In fact, as a result of the HRDP, an informal collegial network was developed among the business owners and key project staff members. This network facilitated cross-training and bench marking among participating businesses. In other instances, the group is still in the process of identifying and operationalizing ways of measuring processes and outcomes, such as "improving the quality of decision-making processes."

Perhaps most clearly recognizable factor was the high level of commitment by the owners/CEOs to improving the overall capacity of their employees. These business representatives agreed to seek to: (a) enhance the development of their employees, (b) collaborate with one another to master the challenges of operating small businesses in rural settings, and (c) improve the quality of the educational offerings provided by local public institutions by making their needs known and by participating in training-related decision-making processes. Such a long-range perspective was meaningfully expressed by one business owner who, when asked for his main reason for participating in the project, stated that his main interest was to ensure that 10 years down the line that the Technical College would have a more relevant and focused curriculum in place where he could send his employees for training and retraining and recruit new workers.

After determining the expectations of the business owners as a group, it was agreed that project staff would work with each business individually just prior to commencement of training to determine a small number of relevant key indicators, making use of already existing measures, and coordinating the development and implementation of such measures where none existed. Using a pre/post approach, business level indicators are measured before the onset of training and again six months after completion of the training has been completed to assess the potential impact of the training intervention at the business level.

Assessing Stakeholder Needs And Expectations: Employees Assessing the training needs and expectations of employees was a key component of efforts to assure that training interventions would successfully achieve the objectives of the business owners, as well as meeting the needs of current employees. A two-pronged assessment strategy was employed. To measure gaps between job skill requirements and corresponding skill levels of workers, the HRDP used the Work Keys system developed by American College Testing (ACT). To asses the level of training readiness and related motivational components, a survey was administered to incumbents and small group discussions were conducted by trained facilitators. The resulting information are now used to tailor the training to the needs of the employees, they also as a baseline measure that will allow for assessment and evaluation of the effectiveness of the training.

Training Needs Assessment Work Keys is a proprietary training system developed by ACT in the early 1990s to address "those workplace skills which apply to a wide range of jobs, are teachable in a reasonable period of time, and can be defined for purposes of job analysis" (ACT, n. d.). The system consists of four integrated components, Job Profiling, Assessment, Training, and Evaluation.

The Work Keys system has received much attention in the research literature in recent years: the psychometric properties of two of the eight scales were validated with over 6,000 high school students and adult employees by Vansickle (1992), and two others by Brennan (1995); a summary of all available validation studies is available from the publisher (ACT, 1996). The system has been adopted by several states, among them Ohio, whose vocational competency assessment program (OVCA) is based on the Work Keys system and has resulted in a library of job profiles for 39 occupations (The Ohio State University, 1995). The profiling and assessments of employee competence is conducted in three dimensions: PROBLEM SOLVING SKILLS (Applied Mathematics, Applied Technology, Observation), Communication Skills (Reading for Information, Writing, Listening, Locating Information), and Interpersonal Skills (Teamwork).

The results of the needs assessments conducted by trained assessors with the initial group of five companies (109 incumbents assessed) resulted in the following distribution (Table 2) of training needs. The results of the needs assessment indicate that, as a group, 84% of the employees needed some form of remedial training, with individual companies ranging from 69% (Organization D) to a high of 95% for Organization A. The largest training needs were in a cluster made up of Observation Skills (48% of employees needing training), Applied Technology (45% of employees needing training), and Locating Information (39% of employees) needing training. Reading for Information and Applied Math were the two lowest skill areas with 20% and 18% of employees respectively needing some form of training to meet the requirements of their job. Overall, there was a significant difference of training needs among the eight subject areas (F=10.50, 8/91 d.f., $p \leq .001$).

Table 2
Results of Skill Assessment (N=109)
(Number of Employees needing Training/Number of Training Units)

Org.	Number of Employees Assessed	Read Employ/Units	Math Employ/Units	Info Employ/Units	Tech Employ/Units	Observ Employ/Units	Team Employ/Units	Writing Employ/Units	Listening Employ/Units	Sum Employ/Units %
A	20	3/6	5/8	13/17	12/20	12/12	11/15	7/8	14/15	19/101 95%
B	17	1/1	3/3	1/1	3/3	12/13	2/2	0	n/a	13/23 76%
C	9	1/1	0	3/3	4/4	3/3	1/1	8/9	0	8/22 89%
D	37	12/15	9/12	20/37	24/34	17/27	20/30	11/20	14/23	34/208 92%
E	26	5/6	3/4	6/7	7/13	10/13	0	10/14	3/6	18/63 69%
SUM	109	22/29	20/27	43/65	50/74	53/68	34/48	36/51	31/44	92/417
Avg %		20%	18%	39%	45%	48%	31%	33%	28%	84%
Avg # person units		.27	.25	.60	.68	.62	.44	.48	.40	3.82

Key: Read: Reading for Information; Math: Applied Math; Info: Locating Information; Tech: Applied Technology; Observ: Observation; Team: Teamwork; Writing: Writing; Listening

Training Readiness and Motivation for Training. *In* addition to assessing the cognitive skill needs of the incumbents, the project's leaders also decided to address attitudinal and motivational concerns that may facilitate the acceptance of training by the employees. This approach was based on an understanding of trainees as active participants in the education process, whose early involvement in planning was crucial for the success of the project. This approach contrasts with other needs assessment methodologies, such as Swanson's (1995) Training for Performance System, which fails to explicitly focus on the needs, expectations, and concerns of the future trainees as an important group of stakeholders in the process.

A three-pronged approach was used to determine attitudinal and motivational issues among the future trainees prior to the commencement of training. First, a short written survey was administered that probed for levels of satisfaction with key aspects of the present work situation. According to established job satisfaction literature, general job satisfaction and satisfaction with pay, co-workers, supervisors, training, the work itself, and opportunities for promotion were assessed to determine a pre-training baseline level of satisfaction among the employees.. The results of this survey are summarized in Table 3.

Table 3
Employee Pre-Training Satisfaction Levels (N=55)
(4 = high, 1 = low)

Organization	General Job Satisfaction mean, sd	Satisfaction with Pay mean, sd	Satisfaction with Co-Workers mean, sd	Satisfaction with Supervisor mean, sd	Satisfaction with Training mean, sd	Satisfaction with Work mean, sd	Satisfaction with Promotion mean, sd
A (n=17)	2.98, .34	2.82, .35	3.11, .49	2.97, .54	2.68, .43	3.0, .10	2.31, .48
B (n=6)	2.44, .27	1.67, .52	3.42, .80	2.17, .98	2.75, 4.2	2.92, .20	1.83, .26
C (n=6)	2.78, .27	2.0, .45	3.08, .20	2.58, .49	2.75, .42	2.67, .68	2.5, .45
D (n=13)	2.77, .35	2.1, .46	2.95, .44	2.5, .41	2.45, .37	2.75, .35	2.35, .58
E (n=13)	2.58, .49	2.11, .65	3.11, .58	2.73, .56	3.0, .60	2.61, .58	2.46, .80
All (N=55)	2.76, .29	2.28, .45	3.11, .37	2.68, .44	2.72, .34	2.81, .34	2.32, .42

As depicted in Table 3, the highest levels of facet satisfaction are with the work itself and with the co-workers, while the lowest levels of satisfaction were reported with opportunities for promotion. There were statistically significant differences in satisfaction scores among the five companies (F=2.546, 4,44 d.f., $p<.06$).

The questionnaire also assessed the level of motivation for training. The overall level of motivation was high, ranging from 2.94 to 3.39 on a 1-4 Likert scale, and there were no significant differences among companies.

Employees were also asked to respond to three open-ended questions about their criteria for determining if they perceive training to be successful ("The training will be a success for me if..."), specific concerns related to the training ("If there is one thing that makes me nervous about this training, it is that..."), and suggestions for training delivery ("The most helpful thing that the trainers could do to help me learn better is..."). A content analysis of the answers to these questions yielded a surprisingly large amount of information that augments the quantitative data. Tables 4 summarizes answers to the question about how employees visualized successful training. While the majority defined success of the training in terms of their increased contribution to the company, an equal number asked for training that was easy to comprehend, useful to their particular job, and structured in a way that would help them succeed. The second most frequent group of responses focused on the expectation that successful training should result in increased pay and promotion opportunities within their current place of employment. Lastly, a smaller number of employees suggested that the benefits of training should go beyond their present employment settings and, thus, increase their overall marketability in the related job market.

Table 4
Themes to open-ended question: " The training will be a success for me if..."
(61 responses overall)

Theme	Frequency/%	Examples
Improve job performance and proficiency	19 31%	...if I become more efficient in my job ...if get better knowledge of required skills .... training is useful for my job
Training leads to increase in pay and opportunities for promotion with present employer	19 31%	...if I get compensated accordingly ...if I get a promotion and a raise ...if I get a better position with my company
Training leads to increase general career marketability	6 10%	... if I can go anywhere in the job market ...if training is useful for my future job ... if I better myself through education

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The second open-ended question addressed fears that employees might have with respect to training. As Table 5 shows, the majority were concerned that training might be too general and not specific enough to their present job requirements. This is a serious concern in light of the general nature of transferable skills training. Only slightly behind the concern about insufficient relevancy was the fear of personal failure in completing the training. As became clear from the survey comments, a large number of incumbents appear to have had negative experiences in the public school system and now fear that problem will recur during training. The third broad theme in this category was the pronounced fear that the test results would be used against employees by their employers and would negatively impact their futures with their employers. This fear persists despite the fact that the assessment procedure clearly specified that test results were confidential and would not be disclosed to the employers, other than in aggregate form that would prevent the identification of specific individuals.

Table 5
Themes to open-ended question:
" If there is one thing that makes me nervous about this training, it is that..."
(35 responses overall)

Theme	Frequency/Percent	Examples
Training not useful	14 40%	...that the training may not be focus on the exact skills I need ...that the training will be too academic. ...that the school will benefit more from the training than the my company.
Fear of learning	12 34%	...it will be intense like high school and I won't complete it. ...you have to be a good reader to complete the training ....there'll be too many tests and problems
Lack of trust in employer	8 23%	...my employer will find out what my score is and this will effect my job. ...I might get fired if I do not do well. ...results of testing will go against me.

The final open-ended question probed for any training improvement suggestions by incumbents that might enhance their success in training programs . Here a large majority focused on useful, easy-to-comprehend, and hands-on training content, along with the need for visual materials, and careful timing and suitable location for the training.

Conclusions

Prior research has clearly established the relationships between workers' job-related skills and their productivity levels. Unfortunately, approximately one-third of the workforce has levels that have been estimated to be inadequate for their jobs' skill requirements. The high priority assigned to overcoming these skill deficits is substantiated by the $17.3 billion that businesses are estimated to have spent on training efforts during 1994.

This project represents one of the few cases where required job-related skills were actually measured instead of estimated. By measuring required job-related skills and corresponding worker skills, it was possible to identify training needs and thus, determine the type and level of training need and to establish a baseline for assessing training effectiveness.

As a group, 84% of the targeted workers were found to need additional training in one or more of the skills areas examined. Surprisingly, the skill areas related to the greatest training need levels were not related directly to reading and math (as the popular press would lead us to assume). In fact, these skill categories consistently had the lowest identified training needs associated with them. Surprisingly, there was a consistent need for the most training in the WorkKeys categories labeled Applied, Technology, Observation Skills, and Applied Math. These differences in training needs were statistically significant .

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When targeted employees' attitudes and motivational traits were surveyed, it became clear that these employees' viewed their upcoming training as a resource for: (a) improving their job performance and proficiency, (b) increasing their pay and opportunities for promotion with their current employers, and (c) increasing their general career growth and marketability with other potential employers.

When employees were surweyed to identify their fears regarding the negative aspects of training that they wanted to avoid. three themes were identified. These employees were concerned that: (a) training would not be useful or practical in relation to their jobs, (b) training activities would be too difficult for them to succeed, and (c) employers would access their training scores and use that information to the disadvantage of the trainees. Clearly, these issues cannot be avoided and must be accommodated when training is designed, developed, promoted, and implemented.

These employee concerns could be attended to by being attentive to the suggestions provided during a survey of the "most helpful things that trainers could do to help trainees learn better during training". The key findings of that survey encourage trainers to: (a) provide concise and practical training curriculum, (b) use training materials and strategies that are very visual and hands-on, and (c) schedule training activities at times and locations that meet the needs and interests of the trainees.

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Diagnosing the Learning Network in a Changing Organization

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The learning network theory offers a framework (in terms of content and procedure) for the diagnosis and improvement of learning networks in organizations. This theory holds that there is a correspondence between (changes in) the organization of learning networks and (changes in) the work performed in companies and organizations. This article reports on a diagnostic study of the learning network and the work performed in a Dutch service providing organization. It is concluded with suggestions for application by HRD executives.

An organization (Dos) which gives counselling to students and educational institutes in issues related to the connection between education and employment (and which advises large numbers of students on their choice of school and career) is confronted with drastic changes taking place in its environment. The market is changing and the financing of the institute is soon to undergo a fundamental change. Dos will have to reorganize its work and adopt a more systematic approach to the learning and training of their employees, i.e. their careers advisers.

Researchers from the University of Nijmegen were asked to make a diagnosis of Dos. They opted to take the learning network theory as the basis for their analysis. This theory states that there is a relationship between (the changes in) the work on the one hand and (changes in) the organization of the learning network on the other.

In this paper I will first briefly introduce the learning network theory, then discuss the research questions and the methodology of the research and finally outline the results and the interpretation. This research project has brought in a number of insights that can have great significance for diagnosing organizations in terms of learning; these are outlined in the final section.

The Learning Network Theory: Learning Networks and Work in Organizations

In the learning network theory (Van der Krogt, 1995), a network approach to organizing is applied to learning systems. This means that an organization is conceived of as a network of actors who undertake actions in interaction and thus shape the structure (Nohria, 1992). Organizations are seen as networks (Baker, 1992), in which there are two (sub-)networks that are especially important for the issue at hand: the learning network and the work network. We will concentrate here on the learning networks and make only a few remarks on the work network.

Learning networks and actors. Learning activities (and work activities) take place in *networks*, that is to say more or less durable structures of cooperation between actors within and around organizations, set up to tackle certain problems and achieve certain goals. The term *actor* should be understood in a broad sense (Brinkerhof & Gill, 1994). It is not only trainers and managers who serve as actors in learning networks, but other groups and organizations as well, including for instance training counsellors, course developers, middle managers, personnel department staff, foremen, buyers, suppliers and the employees, i.e. the learners themselves. Moreover, actors can come from within or outside the organization - think, for instance, of external training advisors and educational institutes.

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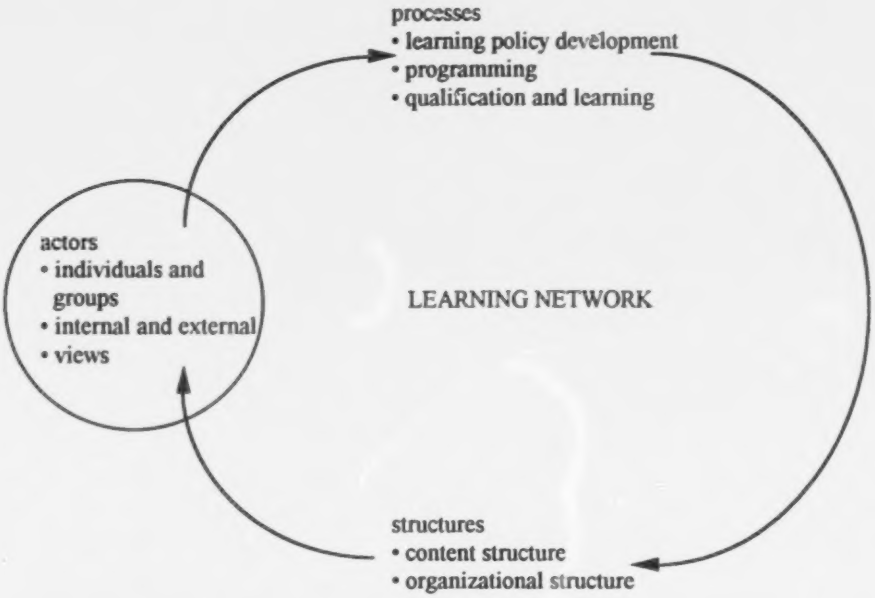
Figure 1: learning network with actors, processes and structures

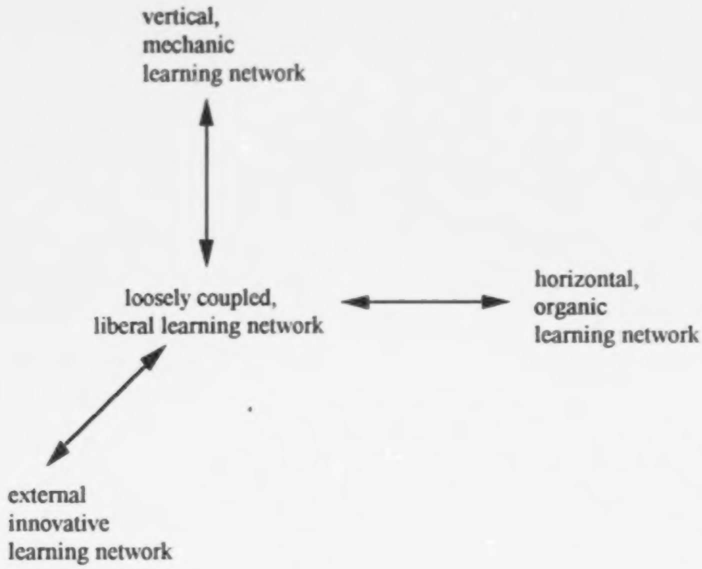

processes
• learning policy development
• programming
• qualification and learning
actors
• individuals and groups
• internal and external
• views
LEARNING NETWORK
structures
• content structure
• organizational structure

Learning networks: structure, culture and processes. Learning networks (like work networks) have a certain *structure*. Firstly an organizational structure, that is to say a certain division of tasks, responsibilities and authority among the participating actors. Secondly the content structure, comprising the whole of the learning situations (formal and informal, on- and off-the-job) available to the actors in order to create learning programs (Jacobs & Jones, 1995; Marsick & Watkins, 1990). Learning networks can also be analysed in terms of their *cultural aspects*, comprising such elements as the values and norms, the views and rules on which the actors base their actions.

Within these structural and cultural frameworks, the actors continually work together to shape the three *main processes* of the learning network: the design of learning policy, the development of learning programs and carrying out learning activities (qualification and learning).

Development space and dimensions. Learning networks are not static but constantly evolving structures of cooperation. The actors are important motors of the *development* of learning networks.

Figure 2: three-dimensional space for the analysis of learning networks, types of learning networks and development lines



Learning networks can develop in different directions, which can be visualized by means of a three-dimensional space, the three dimensions being:

- a vertical dimension, representing the extent to which the processes are steered from above, by management. A development of the learning network along this dimension implies a strengthening of hierarchical control by means of policy plans, formalized training programs and strict guidance of course participants. Taken to its extreme, verticalization can lead to a hierarchical, mechanically organized learning network.
- a horizontal dimension, representing the extent to which the processes in the learning networks are steered from below, by groups of members of the organization. A strengthening of this dimension implies a development of shared views on training and learning and an intensification of group cooperation on the programming and implementation of learning trajectories. Taken to its extreme, this dimension will create a horizontal, organically organized learning network.
- an external dimension, representing the extent to which the processes are steered from the outside, by external actors. Development along this dimension implies greater influence of organizations such as R&D institutes, trade organizations and training institutes on the development and implementation of learning programs. The extreme type on this dimension can be referred to as the external, innovative learning network.

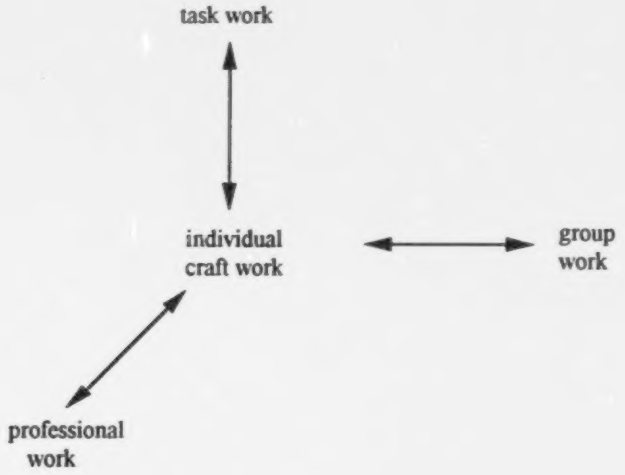
In addition to the three above-mentioned development lines, a *fourth direction of development* can occur, namely the `liberalization' of the learning network. This development implies a weakening of the vertical, horizontal as well as external dimensions, giving the individuals greater freedom to develop learning trajectories and undertake learning activities independently, on the basis of their own views and needs. In its extreme form, the resulting learning network can be typified as a loosely coupled, liberal/individualist learning network.

Differences between learning networks. The three-dimensional space also allows us to take `snapshots' of learning networks by determining their position along the three dimensions at any given time. An existing learning network in an organization will only rarely correspond with one of the four possible extreme types (and so be situated on the extreme end of one dimension);

combining elements of all four dimensions, it will generally be located at a certain point in the space in between the dimensions.

Work networks in organizations. Like the learning network, the work network can also be organized in a wide variety of ways. The different work networks can also be visualized by means of a three-dimensional space.

Figure 3: Work network in a three-dimensional space



(Explanation: The different types of work are defined in accordance with Mintzberg's typology (1989). In machine organizations, the work in the primary process is organized along the principles of Taylorist jobs; in the adhocracy group work is the dominant work form in the primary process; in professional organizations the work is structured along the principle of professional work, while in the entrepreneurial organization operative work is structured as individual craft work.)

General work hypotheses. Organizations with certain types of work are expected to also tend to have certain types of learning networks (compare Figures 2 and 3). It is also assumed that there will be a certain degree of correspondence between the changes taking place in the work performed and those in the organization's learning network. The correspondence between the work and learning networks is due to the fact that both networks form part of the same more comprehensive organizational network and the fact that work actors also participate in the learning network. On the other hand, learning networks cannot be expected to fully coincide with work networks in view of the nature and the specific technology employed in learning processes.

Research

The Dos organization is undergoing a change. The diagnostic study aimed at identifying the changes taking place in the work performed and in the learning network and establishing whether the learning network at Dos supports the workers in coping with these changes. Proceeding on the basis of the learning network theory, the issue can be rephrased as follows:

- how is the work network organized and which developments are taking place in it;
- how is the learning network organized and which developments are taking place in it;
- to what extent do the (changes in the) work network and the (changes in the) learning network correspond?

Research questions. For this research project, concentrating on a limited number of elements of the work and learning networks, we formulated the following research questions:
1. Work: what are the tasks and responsibilities of the careers advisers and in what respect are they changing? The analysis here was conducted on the basis of the four types of work outlined in Figure 4.

Figure 4: Four Types of Work

	TYPE OF WORK			
	individual work	task work	group work	professional work
TASKS AND RESPONSIBILITIES	broad range	narrow and simple	varying	complex
	individual autonomy (contractual)	centrally determined (standardized)	collectively determined	externally determined

This figure serves to locate the work, i.e. the jobs of the Dos careers advisers, along one or several dimensions and indicate the direction in which the changes are taking place (compare Figure 3). 2. The learning network: what is the structure (in terms of both content and organization) of the learning network and what changes are taking place in it? The analysis here involved the structural characteristics of learning networks as outlined in Figure 5.

Figure 5: Content and Organization Structure of Four Types of Learning Networks

	LEARNING NETWORKS			
	liberal loosely coupled	vertical mechanic	horizontal organic	external innovative
CONTENT STRUCTURE	• unstructured	• structured, programs	• open, problem-oriented programs	• knowledge and method-based programs
instruction	• loose aggregate of learning situations	• instruction on the job and training	• on-the-job learning	• external and training courses
		• job-centered	• group learning	• on-the-job learning/ supervision
ORGANIZATION-STRUCTURE AND ACTORS	• individual responsibility	•'learning' specialists	• group members	• professional
	• enterpreneurial, contractual relationships	• formalized relationships (teacher - student)	• organic relationships	• professional relationships
	• via individual contacts	• internal and external specialists	• infernal and external consultants	• external

Here, too, the figure should enable us to situate the learning network at Dos on one or several of the dimensions.

3. The correspondence between the work and learning networks. In the learning network theory, a certain degree of correspondence is expected to exist between the work network and the learning network. The question then becomes whether this holds true for the (changes in the) job packages of the Dos careers advisers and the structure of the learning network at Dos.

Research design: a diagnostic case study and secondary analysis. Research was conducted in one organization, Dos, and can be typified as a combination of (a) a `diagnostic case study' and (b) a secondary analysis (Miles & Huberman, 1984; Brooks & Watkins, 1994).

(a) The diagnostic case study. The information about the work and learning networks at Dos was collected using the following methods:

- analysis of documents, including annual reports and internal discussion papers;
- formal interviews with the director, two team leaders and (six) careers advisers using topics lists based on the learning network theory;
- informal conversations about the daily goings-on at Dos as well as about the analyses (with one of the team leaders);
- group discussions in the management team and in the careers advisers' staff meeting, about the analyses made by the researchers. Some of the respondents also commented on the analyses in writing;

This information was recorded in extensive reports which were then analysed on the basis of the different elements of the learning network theory. The aim of this analysis was to typify the work and learning networks, that is to say, to situate the two networks in the three-dimensional space. The results of these analyses were then discussed in the management and staff meetings.

(b) The secondary analysis. The roughly structured data and analysis results were used to answer the specific research questions pertaining to the careers advisers' job packages and the structure of the learning network.

Results

Dos is a simple organization. The emphasis is on work operation. There is a management team consisting of the director and two team managers. The core members of the teams, each consisting of about ten employees, are the careers advisers, who can delegate part of the work, testing, to test assistants. Both the learning network and the work of the careers advisers at Dos are only weakly structured.

The work at Dos. The work performed at Dos is undergoing a transition and displays characteristics of both professional and individual craft labor. Essentially, the careers advisers' jobs comprised individual careers and education counselling research. An additional task was to provide information on employment and education opportunities. They worked individually, on the basis of the procedures they had learned during their initial training.

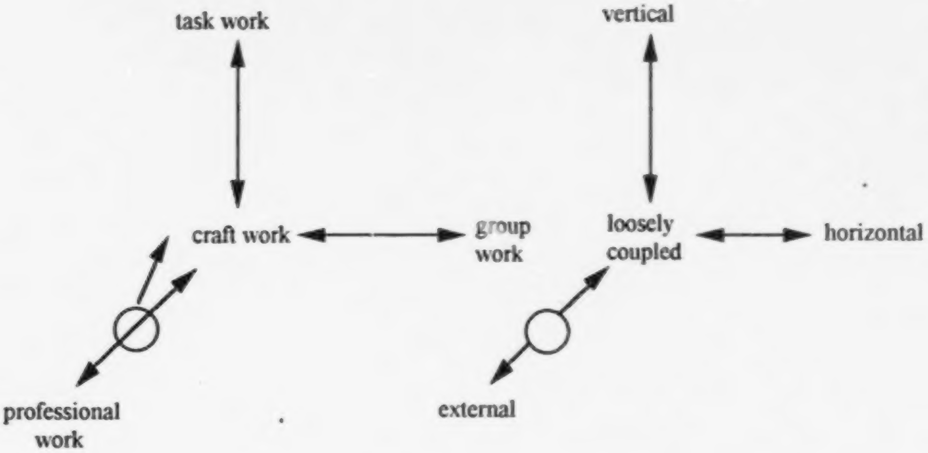
The careers advisers' responsibilities have been broadened up considerably lately, and in two regards: a broadening-up of client problems and a broadening-up of the tasks package. Apart from individual research and counselling, they are now required to conduct individual and group training programs. Counselling is also required to be more finely attuned to the specific problems of the clients. Careers advisers are less able to fall back on tried-and-tested standard procedures, but have to work together with the client to analyse his or her specific questions and develop a suitable program to answer them.

An important new addition to the job package is public relations and marketing. In the past, the director and team leaders took care of PR and marketing. But for some time now the careers advisers are also required to bring in new commissions and maintain good relationships with their clients.

The learning network. The Dos learning network is meager and hardly structured in any explicit way. For the careers advisers, learning is a predominantly individual, incidental and informal matter. Apart from these individual advisers, who learn as they work, only few actors are active in the learning network at Dos and no specific learning network tasks have been given

to any of the staff members. There are virtually no explicit links with external actors in the field of training and learning. 'Learning matters' are raised only incidentally, for instance when careers advisers ask their team leaders permission to attend a conference, or during supervision sessions.
In principle, the work itself offers many learning opportunities, but refresher and postgraduate courses are limited to the occasional external course or congress. In recent years, no changes have taken place in the content or organization of the learning network: basically, the initial vocational training is still the learning network.

Figure 6: changes in the work and learning network of Dos (○)



Work and learning network. The work is moving from professional work, with relatively narrow but complex functions dertermined primarily by the professional associations in the environment of the Dos organization, in the direction of individual craft work.
In the past, the learning network consisted mainly in formal, initial vocational training. This training constitutes the core of an external innovative learning network. The accompanying postgraduate and refresher courses never came off the ground in any significant way. At the time there was no need for such courses, since the work itself did not change much either, so the learning network remained virtually unchanged. However, this limited learning network is no longer equipped to support the careers advisers in coping with the changes going on in their work.

Implications for HRD

Making a thorough diagnosis of the work and learning networks is a prerequisite for sound and effective consultancy on the part of HRD officers. The development of a sound diagnosis and of an improvement program based on it is a process between the actors in the learning network, however, in which the HRD advisor can also play a role. HRD advisors should be well informed about the (existing situation and development tendencies in the) learning network if they are to be able to determine their own place in it and gear the content and direction of their interventions to those of the other actors.

Combination of global and specific diagnosis. In our view, the diagnosis can best be carried out as a combination of a global and a specific diagnosis. The first requirement would be to sketch an overall picture of the work and the learning network, both situated in the three-dimensional space. Going deeper, a specific diagnosis could be made of some elements of the work and the learning network. In the case of Dos, such a specific diagnosis was made of the job content and the structure of the learning network, but specific groups of actors could also be singled out for further analysis, such as the actions or views of external actors or of the careers advisers. It is essential that the specific diagnosis should remain substantially connected with the global diagnosis; the interpretation of the results rests on the location of the network in the three-dimensional space.

Improvement of learning networks, three basic principles. Three basic principles should be observed in initiatives to improve learning networks:

a. We perceive of improvement as a process of development that can take different directions. The existing learning network is located somewhere in the three-dimensional space and can be pulled in different directions from there. In the case of Dos, for instance, alternatives to an improvement of the existing external learning network could include developments in a liberal, a horizontal as well as a vertical direction. In an organization with a vertical learning network a development towards horizontalization could be an option.
b. Improvement of the learning network should be accompanied by an improvement of the work. In the case of Dos, the work is evolving from professional labor in the direction of individual craft labor. The external dimension therefore requires a great deal of attention in the development of the learning network.
c. Improvement should link up with the existing initiatives and plans of actors. Both within and around organizations there are always actors who are already thinking about how to improve the learning network. Such initiatives may not always be very well thought out or systematic, they are fine starting-points for further systematic action. A specific diagnosis is an excellent opportunity for detecting such initiatives.

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Employee Efficacy Generalization of Basic Mathematics Skills

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The purpose of this study was to evaluate the level of generalized self-efficacy perceptions for basic mathematics development to other, less directly related, applications. These applications included daily personal and work related activities which require mathematics attention. The study proposed that the noted gains in performance were, in part, due to improved perceptions of self-efficacy related to basic mathematics and its subsequent generalization to activities which impact the work place. The research applied a quasi-experimental design, utilizing a pre- and posttest of self-efficacy perceptions. The results suggest that as individuals are given the opportunity to participate in developing their basic math skills, perceptions of ability increase for skills associated with personal daily activities, and ultimately with work activities requiring math attention.

Adult literacy is one of many factors that contribute to the quality of work-life and overall work performance, but as technology advances and the necessity of complex work skills increases, it becomes an increasingly important element for success in the workplace. Raising an individual's basic skill level to one representing an appropriate degree of literacy affects the individual in a host of ways. There are obvious benefits, such as a broader vocabulary and greater math comprehension which may, in turn, enhance communication and problem solving abilities. There may be, however, potential benefits beyond these which exist. The enhancement of less tangible attributes such as pride and self confidence may also be affected.

How are these tangible and non-tangible qualities manifested within an organization? One Motorola manufacturing facility reported a 33% reduction in absenteeism, a 4.2% reduction in scrap, an 18% reduction in cycle time, an 18% improvement in production based on outs and a 42% improvement in production based on turns after the organization contracted for and implemented a "workplace literacy program" (Merex, 1993).

Motorola clearly acknowledges some type of transformation other than simply improvement in basic skills test scores. They identified “self-esteem” as one attribute which was “elevated” (Merex, 1993). This study investigates a possible link between the development of an individual’s basic skills and the improvement of organizational performance. The cause of the positive change appears to be the basic skills training which ultimately has the effect of improved performance. The question remains, “How would a seemingly unrelated event such as basic skills development manifest itself in performance enhancement? What mediating variable contributes to this shift?” The following thesis evaluates how developing basic skills effects a person’s perceived self-efficacy and ultimately how this ‘shift’ in self efficacy transfers to performance.

Bandura (1977) described an efficacy expectation as, "the conviction that one can successfully execute the behavior required to produce the outcomes" (p. 79). There are many elements that may affect efficacy levels; experiences, training, support, and environment, to name a few. This study looks at the impact basic math training has upon one’s perception for basic math efficacy and how one’s efficacy is subsequently generalized.

Self-efficacy is generally associated with Albert Bandura (Betz & Hackett, 1983; Campbell & Hackett, 1986; Cooper & Robinson, 1991; Gauthier & Ladouceur, 1981; Lee, 1983; Lent, Lopez, & Bieschke, 1991; Manning & Wright, 1983; and Pajares & Miller, 1994). A unique quality of perceived self-efficacy is that it can be changed; either diminished or expanded. Bandura (1982) states, "In the social learning view, judgments of self-efficacy, whether accurate or faulty, are based on four principal sources of information. These include performance attainments; vicarious experiences of observing the performances of others; verbal persuasion and allied types

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of social influences that one possesses certain capabilities; and physiological states from which people partly judge their capability, strength, and vulnerability" (p. 126). Each of these four "modes of influence" represent very different sources of efficacy determinants.

The first time we touch something hot, we learn not to touch it again. We also learn not to touch other items which are "hot". This enactive learning experience, although painful, is extremely efficient. Learning by doing is recognized almost intuitively as an efficient manner with which to teach many things, but the question remains, how does enactive learning compare to other attainment means? When proficiency of a behavior is considered, there is strong support for the position that enactive, or performance, attainment is the most influential medium of efficacy impact (Bandura, Adams, & Beyer, 1977; Feltz, Landers, & Raeder, 1979). Feltz, et al., (1979) compared the performance and measure of self-efficacy for divers who were led through actual diving experiences with those who learned through observation (either live or videotaped) and found the former group fared much better than the latter two groups. According to Feltz, et al., (1979): "As predicted, the participant-modeling treatment produced higher, more generalized, and stronger efficacy expectations than did modeling-alone treatment which was based upon vicarious experience" (p. 118). Vicarious learning, however, is not without merit. The modeling-alone divers in the study reached some level of performance and demonstrated some standing of efficacy expectation indicating that learning can take place through observation. If learning was dependent totally upon actual experience, there would not be enough time available to actually enact every behavior we need in order to merely survive.

Persuasion by others represents a less effective, but, none-the-less, a real source of efficacy influence (Bandura, 1977). This source of feedback is subject to the circumstances surrounding the behavior. For example, if one is persuaded by a friend that she/he can perform an action and she/he is given the necessary support to successfully effect the action, her/his perception of success will likely be enhanced. Conversely, if the individual is persuaded that he/she can perform an action, but given insufficient support, her/his perception of success will likely be diminished. Regardless, the strength of efficacy perception obtained through persuasion is likely to be much more vulnerable to setbacks than perception obtained through actual successes. (Bandura, 1977, 1982, 1986).

Additionally, our feelings evoke conclusions about our ability to perform. Fear, stress, and other strong emotions can be barriers to action, or at times may create a sense of ability beyond that which an individual normally possesses. Bandura (1977) states, "Because high arousal usually debilitates performance, individuals are more likely to expect success when they are not beset by aversive arousal than if they are tense and viscerally agitated" (p. 198).

Bandura (1977) recognizes magnitude, generality, and strength as dimensions which have an important impact upon efficacy expectations. These dimensions of expectations must be considered as they play an integral role in the understanding of efficacy. It is the dimension of **generality** which was the theoretical construct for this study.

One may feel accomplished at a specific task, but when faced with a like task at a much higher level of difficulty, that individual may feel inadequate to deal with the trial. For instance, in high jumping, a particular jumper may be very confident that she/he is able to jump four feet, but when faced with a height of 4 foot, six inches, the level of expectation is diminished. This can be examined in terms of individual levels of perceived self-efficacy. The individual may have a relatively high perception of efficacy that is demonstrated in confidently completing any jump of four feet; add six inches to that target and the expectation is sorely challenged (Bandura, 1986). This impact to one's perception of self efficacy falls into the self-efficacy dimension of magnitude.

Secondly, self-efficacy can be examined by the dimension of strength. Consider the expression, "It's like riding a bicycle; once you learn you never forget." Self-efficacy strength is much like this. Perceiving many of our skills as mastered, we are confident each time we execute them; with little regard to occasional failures and/or time. It would be difficult to diminish our confidence in ourselves to perform these tasks. Bandura (1977), characterizes the dimension of strength as, "Weak expectations are easily extinguishable by disconfirming experiences, whereas individuals who possess strong expectations of mastery will persevere in their coping efforts despite disconfirming experiences" (p. 194).

The final dimension of self-efficacy, *generality*, can be understood by considering two different young students. One student achieves a level of accomplishment in a math quiz, which confers her/him a higher level of expectation to do well on future math quizzes. A direct benefit of this new found confidence (possibly because of new and improved study habits) may be experiencing a higher level of confidence to perform well in other areas of study. On the other hand, the second student, achieving the same level of success may not necessarily generalize that other areas of study will improve, but is confident that in future math quizzes, if she/he studies, she/he will continue to be successful. Each of us generalize our successes differently, thus altering our sense of self-efficacy experiences accordingly (Bandura, 1977). As stated earlier, this study purports that our ability to generalize self-efficacy expectancies is useful in understanding how seemingly unrelated behaviors are associated.

Generalization of Self-efficacy

The relationship between mathematics development and self-efficacy has been well documented (Betz & Hackett, 1983; Hackett, 1985; Cooper & Robinson, 1991; Lent, Lopez, & Bieschke, 1991; Matsui, Matsui, & Ohnishi, 1990; Pajares & Miller, 1994). Although much research in the area of basic skills (Bandura & Schunk, 1981; Pajares & Johnson, 1993; Schunk, 1981, 1982, 1983; Schunk & Rice, 1991, Schunk & Swartz, 1993) supports the view that a strong relationship exists between performance and self-efficacy perceptions, there is limited literature which either supports or questions the generalization dimension of self-efficacy (Brody, Hatfield, and Spalding, 1988).

Generally, the subject of generalization was addressed as an after thought. As stated, the generalization of self-efficacy is the tendency for one to generalize those acquired behaviors which we have mastered to other behaviors. The inclination is to generalize to like behaviors (Bandura, 1977; Biran & Wilson, 1981; Brody, et al., 1988). Additionally, learnings which have impacted our self-efficacy expectations due to performance accomplishments are more likely to be stronger and more generalized (Bandura, 1977 & 1986; Bandura, Adams, & Beyer, 1977; Biran & Wilson, 1981). Generalization of self-efficacy also appears to increase as command of skills increases (Bandura, 1986). Encouragement has proven to be a factor in the generalization of self-efficacy, particularly with regard to treatment of phobias (Bandura, 1986).

Biran and Wilson (1981) looked at the generality exhibited by phobics undergoing a variety of treatments. It was questioned whether one who appears to reduce anxiety associated with a fear of one kind and has that fear extinguished or partially extinguished, would transfer that learning to a similar fear. Those individuals who participated in the performance accomplishment condition (guided exposure), "reported major changes in their daily life, to the point where their phobias ceased to constitute a problem" (p. 987). Biran and Wilson found generalization to take place and to be strongest for performance attained self-efficacy (p. 898). Williams (1992), adds, "when agoraphobics are given performance-based treatment for one of their phobias (e.g., driving), while another phobia (e.g., grocery shopping) is left untreated, generalized improvement occurring in the untreated phobia is accurately predicted by degree of improvement in self-efficacy for that phobia" (p. 157). The generalization of self-efficacy was again supported in research conducted by Brody, Hatfield, and Spalding (1988). In an evaluation of the generalization of a high-risk task (rappelling), Brody et al. (1988) determined that self-efficacy was generalized for "similar situations" (p. 32).

Research Questions and Hypotheses

The primary purpose of this study was to evaluate the level of transfer of self-efficacy perceptions for basic math development to other, less directly related, applications. These applications included daily activities and work impact. This effort explored one possible explanation for increased organizational performance after members experienced enhancement of their basic skills. Specifically the question this study posed was, *Is it possible that individuals tend to generalize* *from the development of her/his level of perceived self-efficacy for basic skills to her/his perception of self-efficacy for work impact?*

The formal hypotheses for this study were:

1) Upon completion of basic math development, participants will demonstrate a level of perceived self-efficacy for math, which reflects any improvement or digression in performance.

2) Participants will demonstrate a level of perceived self-efficacy related to daily personal activities which require mathematics attention, in relation to any change to perceived self-efficacy for math.

3) Participants will demonstrate a level of perceived self-efficacy related to work activities which require mathematics attention, in relation to the results to any change in perceived self-efficacy for math, but to a lesser degree than a change noted for perceived self-efficacy related to daily personal activities which require mathematics attention.

Method

Participants The participants were adult men and women employed by a company associated with the health care industry. All participants worked in a manufacturing environment as production workers, or support staff. All members of the group which received training in basic mathematics willingly enrolled in the training course and voluntarily participated in the study. Members from the control group were not currently enrolled in the mathematics course, or a math-related course. Their participation in the study was also voluntary.

Design of Study This study was a quasi-experimental design conducted in an action research environment. The data gathering plus the training in basic math took place in a field setting. Two groups were used in this study. The treatment group, or Group One, consisted of participants who were enrolled in the basic math course. Two instructors taught the course; one taught two sections and the other taught one section. The subject matter was identical. Group Two consisted of participants who were not enrolled in the math training course, or any other formal math related course, during the span of the evaluation. The group served as a control group. A minimum of thirty participants was maintained for both groups; Group One had thirty two members and Group Two, forty eight.

The mathematics course was conducted by a local two year community college in partnership with the organization which employed the participants. The course was an introductory level math course identical to those offered by the college on campus. The students received no compensation for participation in the classes, but the classes were provided at the work sight.

Both groups were given a pre- and posttest which measured self-efficacy perceptions for basic mathematics. The test also included sections which measured the tendency for one to generalize from a specific behavior, to a broader behavior. In this case, the measure evaluated the tendency to generalize one's perception of her/his ability to solve basic math related problems, to daily tasks which are math related and ultimately to work tasks, which are math related. Additionally, the members of Group One were given a pre- and posttest of basic math skills.

The dependent variable for both groups was self-efficacy with the addition of mathematics performance as a dependent variable for Group One. The independent, or treatment, variable was the basic mathematics training which Group One received. Furthermore, the measurement tool included an exploratory section intended to measure the tendency for the dependent variable of self-efficacy to be generalized by both groups. Thus, the generalization of self-efficacy, is also considered a dependent variable.

Instruments A mathematics self-efficacy scale was developed, piloted (revised), and tested for reliability and validity. The scale was constructed using Likert principles and consisted of four subscales related to self-efficacy and generalization of math skills; self-efficacy for mathematics, self-efficacy for personal math-related activities; self-efficacy for work-related activities, and self-efficacy for generalization of math skills. A standard pre- posttest for the mathematics course was also utilized which measured acquisition of basic mathematics skills.

Data Analysis Each of the measurement sections for self-efficacy was evaluated separately. No single total figure was used to compare performance. T-Tests for paired samples were calculated between pre- and posttest scores for comparison between the two indices. Additionally, pre- and posttest scores for the generalization sections were evaluated and compared in order to determine if change was statistically significant. For Group One a comparison between mathematics self-efficacy and math performance was made.

Results and Conclusions

The hypotheses in this research predicted a change in one's perceived self-efficacy with regard to math related activities as one undergoes training in basic math. To test the hypotheses, data were analyzed using a t-Test for paired samples. Because of the repeated measures (pre- and posttesting), a correlated sampling design was used (Spatz & Johnston, 1989). During the analysis of the instrument, a descriptive form of statistical analysis as well as a mathematical item coefficient comparison was utilized. The analysis also addressed reliability and validity.

The analysis first addressed the results from the development of basic math skill for Group One. Hypothesis one was evaluated using the data from the t-Test analysis of the math self-efficacy testing. These data were compared to math proficiency improvement. The second hypothesis was evaluated using figures from pre- and posttests for self-efficacy perceptions for math related to personal activities. A comparison of t-Test values was made between these results and those for math self-efficacy. Hypothesis three was assessed by analyzing self-efficacy perceptions for work related math activities in comparison to those for perceptions for personal math related activities. A similar analysis was performed for Group Two, but with additional emphasis upon the question of reliability for the instrument developed and used in this study.

The t-Test for paired sampling compares pre- and post scores for a target group. In this study two groups were utilized. The test establishes a boundary ("t Critical" measurement) which is based upon the degrees of freedom. The degrees of freedom (df) may be determined by the sample size minus 1. As with other calculations, a N = 30 is advised, but for t-Tests, not required. In this study both group sample sizes exceeded 30 (group 1 = 32 & group 2 = 48). The t Critical measurement provides the boundary for which the decision to either reject, or accept the null hypothesis (Ho) may be made. If the absolute value of the calculated t score, referred to as "t Stat", is greater than the t Critical measurement, the null hypothesis is rejected; if not, the null hypothesis is retained. The null hypothesis states that the two populations have the same mean. Because the formal hypotheses predict change within the treatment group, the null hypothesis must be rejected in order for these to be supported. All calculations which are discussed have been made with a confidence level of 0.95 (= 0.05).

Group One There was a highly significant statistical difference between pre- and posttest scores for math skill. The absolute value of t Stat (11.780) is substantially greater than the value of t Critical for one-tail analysis (1.696). All participants with the exception of one showed improvement with regard to math performance scores. The individual who did not show improvement scored the maximum on both the pre- and posttests. The only other individual who did not show double digit gains, scored high enough on the pre-test so that only nine points could be gained with a perfect score on the posttest.

It is clear that the variance in the means for the math performance scores is significant and thus supports the rejection of the null hypothesis. The question posited is, "How does this impressive improvement for basic math performance translate into one's perception for self-efficacy associated with math?" Although it was anticipated that Group One participants would experience gains in performance, it was not hypothesized. The impact that the math development subsequently has, of course, was hypothesized. Hypothesis one states: Upon completion of basic mathematics development, participants will demonstrate a level of perceived self-efficacy for mathematics which reflects either improvement or digression in performance.

The results achieved from math development indicate that self-efficacy perceptions for math would also improve and this was the case. Group One math self-efficacy showed a statistically significant increase; t Stat = 2.519 vs. 1.696 for t Critical. The significance is less than the value achieved for math performance, but still significant. The null hypothesis for Group One math self-efficacy is, therefore rejected, and hypothesis one supported. These results are not unexpected as research has demonstrated that math self-efficacy is influenced by a variety of treatments (Bandura & Schunk, 1981; and Campbell & Hackett, 1986). The results are important in establishing a construct relation, which is critical for construct validation.

The second hypothesis states, "participants will demonstrate a level of perceived self-efficacy related to daily activities which require mathematics attention, in relation to a change in perceived self-efficacy for mathematics." The importance of this hypothesis is that it predicts the generalization of one's self-efficacy from basic mathematics to personal activities associated with mathematics. Here the results also support the rejection of the null hypothesis and the acceptance of hypothesis two. Interestingly, the significance achieved was higher than that for mathematics self-efficacy. The t Stat was equal to 3.997 and t Critical of course remained equal to 1.696.

The third and final hypothesis asserted that generalization of self-efficacy for math would continue to be generalized into an individual's perceptions with regard to math attention at work. It was hypothesized that the level of significance would be less than that generalized for personal math activities such as balancing one's checkbook. The results supported the rejection of the null and the acceptance of hypothesis three. As predicted, the significance (t Stat = 2.179 vs. t Critical = 1.696) was somewhat less than that seen for self-efficacy related to personal math activities.

Group One's tendency was to translate improved math skill into higher self-efficacy perceptions related to math. Furthermore, the results also support the belief that one tends to generalize one's perception of self-efficacy. While Group One showed a quantitative shift regarding the measurement indices, the results remain unconvincing without a review of Group Two.

Group Two The control group received no basic math development (treatment) during the period of the study. Any extraneous or chance variable which may have influenced the results was generally available to members of both Group One and Group Two. Any influence was anticipated to be random in nature.

Group Two served as both a check and balance for the results obtained in Group One, and as a test for reliability of the instrument. This portion of the analysis addressed the results with regard to the statistical significance and what this means when compared to Group One. As stated, the control group was not given pre-and posttests for math performance. In order for the formal hypotheses to be endorsed and ultimately for test reliability to be established, the results for Group Two must fail to reject the null hypothesis.

Group Two results for math self-efficacy failed to reject the null hypothesis. Because of the difference in size for the two groups, t Critical for Group Two was equal to 1.678. The t Stat results for Group Two mathematics self-efficacy was equal to 1.425. In both groups the results for math self-efficacy, although supportive of predicted results, were not as substantial as might have been expected.

The data for self-efficacy perceptions which apply to personal math related items indicated little variance for Group Two. The t Stat equaled 0.894 and when compared to the t Critical value of 1.678 indicated no significance.

These results fail to reject the null hypothesis and thus strengthen the argument that Group One experienced a shift in mathematics efficacy related to personal activities. The case for generalization is also strengthened. Additionally, reliability of the instrument is supported.

The data summary for Group Two's response to the portion of the instrument which addressed self-efficacy related to math in the work place again failed to reject the null hypothesis, indicating that, as expected, the treatment did impact Group One's perception of self-efficacy with regard to work related math items. Also, the instrument provides a reasonable degree of reliability. The t Stat was equal to 0.7912 which, when compared to the t Critical of 1.678, indicates the means are from the same population.

The overall results for Group Two maintain the acceptance of the formal hypotheses by failing to reject the null hypothesis for all three sections discussed. The data from Group Two also strongly support the acknowledgment of format reliability for these portions of the instrument. Prior to looking at instrument reliability and validity, the portion of the instrument which addressed the tendency to generalize was evaluated. This portion was not formally a part of the hypotheses, but rather, was utilized as an exploratory tool. The items, as stated, were a divergence from the format used to assess self-efficacy perceptions. The items asked for responses to perceptions of, if this, then this.

Generalization The data produced in the generalization section of the instrument were purposely excluded from formal hypothesis. It was anticipated that these data would offer insight into the outcomes previously discussed. As with the data for self-efficacy perceptions, Group One data indicated a significant shift, while Group Two did not.

The t Stat (3.060) for Group One indicates that the mean has a high degree of possibility of falling outside the limit established by the t Critical figure (1.696). The t Stat (0.668) for Group Two, however, indicates that it is unlikely the mean lies outside the t Critical range of 1.678. All indications are that the members of Group One showed a measurable difference in their perceptions with regard to the generalization of math skill. Two questions remain, "Was this portion of this test reliable and did either group show an initial higher propensity for generalization?" Both questions may be answered by looking at and comparing pre-tests. Table 1 represents a summary of a t-Test for a difference in two population means, when the standard deviation is unknown and the means are assumed equal.

Table 1. t-Test: Two-Sample Assuming Equal Variances; Group 1 and Group 2, Pre-test

	Group 1	Group 2
Mean	*29.375*	*30.10204*
Observations	*32*	*49*
Hypothesized Mean Difference	*0*	
t Stat	*-0.561932*	
t Critical one-tail	*1.664371*	
t Critical two-tail	*1.990452*	

It is reasonable to assume that both groups entered into the study with a relatively similar propensity toward generalization. Although the study is quasi-experimental in nature, both groups come from the same population. The t Stat figure in supported the retention of the null hypothesis supporting the assumption that both groups began the study with a similar propensity to generalize (again assuming that the generalization portion is a valid measurement of this concept). Regardless, both groups appear to have started equally positioned. Coupled with the relationship between pre- and post testing for Group Two, it can be argued that regardless of what the section measures, it was reliable. When the results for sections two and three for both groups are considered, it is reasonable to speculate that the generalization section adds support for construct validity. This section was intentionally worded in a manner which required the respondents to relate one behavior to that of another. For example, one item states, "Learning math helps my reading skills." All other sections asked for rating of a specific action. For example, "I have difficulty dividing numbers."

Significance to HRD

The problem statement was developed to determine the fundamental relationship between literacy enhancement and organizational improvement. The concept of self-efficacy was posited as a potential link. As the results support this position, it is recommended that further clarification of the role self-efficacy plays within an organization be explored. The recommendation is that the concept of self-efficacy be explored and looked at more critically as a possible tool for organizational use. Subjectively, one knows that a person who has a strong perception of her/his abilities will generally outperform an individual who generally feels poorly about her/his ability to perform. In the past, this gap has generated such labels as, "lazy, poor attitude, bad influence, etc." for those who may merely hold poor perceptions of their capability. Organization leaders must begin to recognize what type of strategies for development are available and take advantage of these. One such strategy is the enhancement of self-efficacy. As demonstrated in this study, an event as straight-forward as the development of an individual's basic math skill, has a broader, more comprehensive impact, both for the individual and for the organization.

Ultimately an organization's success depends upon the contribution of its members. The level of skill which is required and how this coincides with the level that the organization's members possess is critical. Generally speaking, adult literacy requirements will continue to be a crucial element in the ultimate success of any organization (Newman & Beverstock, 1990). It is recommended that the importance of adult workplace literacy be recognized as a key element in the ultimate success, or failure, of most organizations.

Although many questions remain, the results provide interesting insight into the perceptions one has regarding her/his ability to "execute a behavior." With the understanding that generalization of this perception does occur, organizational professionals, trainers, educators, and ultimately learners may be better prepared for augmenting the learning process. More specific research is called for; research which may enhance the understanding of how specific teach strategies, or methods, impact the learner's self-perception of ability.

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A Case Study of the Feasibility of Developing a Writing Test for Hiring Technical Writers and Instructional Designers.

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This paper describes the process used to develop a writing test for technical writers in a high technology company. The test used accepted linguistic principles used to evaluate the degree to which instructions and consumer documents conform to plain language standards. Although the test did yield high interrater reliability, such tests are inevitably subjective and can not be assumed to have validity equal to accepted standardized measures.

The Purpose of the Study

This case study describes the development of a writing test to be used in hiring technical writers and instructional designers at a high technology company. The test development was one facet of an ongoing four year workforce literacy project. The management recognized the need for developing a skilled workforce and undertook a broad workforce literacy program (Park, 1996). A set of hiring standards was developed for the assembly workers and the non-management personnel. Although the hiring policy has been effective, the results of a literacy evaluation of the documents used on a daily basis by the workers showed most were written at a level that was unnecessarily high. A workshop was given for the engineers and trainers who wrote the documents. The company also decided to hire technical writers and instructional designers who would work full-time on writing workplace instructions and training materials. In order to ensure the people who were hired could indeed write, the company decided to prescreen those that applied for the job. Consequently we set about designing a writing test based on well researched principles of plain language and document design (See Redish 1979) to be used in hiring technical writers and instructional designers.

The development of this test took place at a time when the entire training HRD philosophy of the company was undergoing a change from behaviorist to cognitive approaches in training. The job descriptions called for applicants who had a conceptual understanding of the job processes and training each work category required. It was also very important that they could communicate effectively in writing and produce documents and training materials that were well organized. The writing test was designed to assess the skills of the technical writers and instructional designers according to these criteria.

Research into Writing

Writing workplace documents bares little resemblance to writing the type of narrative text taught in a typical creative writing class. Workplace documents are typically one or two pages in length and are predominantly reading-to-do rather than reading-to-learn in intent (Mikulecky et al 1980). The user relies on workplace documents either as a reference to act as a guide or instructions in the production process or manuals are used as external memory references only when things go wrong (Mikulcky et al, 1994). Extensive and somewhat dated research has been undertaken in the areas of comprehensibility and useability of workplace documents by Redish. et al at the American Institutes for Research (Redish, 1979). Much of this research identifies those features that make documents difficult to understand (comprehensibility) or to extract information from (usability). These features based on extensive linguistic research are incorporated into sets of guidelines for "plain language" that have been adopted by numerous states as a guide to writing legal contracts intended for the general public (Park and Harvey, 1985). Although the guidelines for plain language have had extensive use in legal and bureaucratic fields, the industrial use of such guidelines has been almost non-existent. Workers in manufacturing for example, are frequently asked to read process sheets, or inspection sheets that would tax the skills of a college graduate (Park, 1996).

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In this context, hiring a technical writer who can produce training and operational documents that conform to plain language criteria is crucial. They must be able to produce documents that are below an eighth grade level and thus comprehensible to the average worker (Functional literacy in the United States is assumed to be eighth grade and up to 30% of workers read below this level, Carnevale et al 1990). In addition they must be able to produce instructions and training materials that are easy to use. Is the writer able to organize the material? Can the writer analyze complex tasks into sub-tasks? Can they keep directions simple? Can the writer sequence information in a logical way so that it follows the operation step by step. Procedural instructions must be presented on the order they are to be performed. Can the writer keep language simple and separate out need to know from nice-to-know? The writer must write clearly and concisely?

Organization is the most important element. However language and style are also extremely important. The vocabulary must be simple and straight forward The syntax must not be too complex. For example, sentences should be kept short -- the guidelines suggest an average of twenty-two words or less. In addition, paragraphs should be less than 60 words. (See Sticht, 1975). The ideas in each sentence must also be kept in a logical order.

Finally the mechanical elements of writing traditionally identified with good writing, although not always crucial to the communication of meaning, must be respected. Spelling must be accurate. Similarly there should not be errors in grammar and usage -- the punctuation should be correct.

Questions to be Addressed.

Can a writing test for industrial writers be developed that conforms to psychometric standards of validity, reliability and generalizability?

Can this test also be developed in a way that is cost effective to use, can be easily used by HRD personnel, and is accepted by applicants as a fair test?

Methodology

Test development

A pilot version of the writing test was developed by a plain language expert and the director of training for the company. The test used all of the criteria established for the development and assessment of plain language adopted by states across the country to identify plain language in the legal and technical fields (Park and Harvey, 1985) These criteria are well researched in a variety of fields (Charrow 1981). The scoring protocol divided the plain language criteria into sections based on organization, language and style, and format.

Table 1: Criteria for evaluating writing samples.

1. Organization

a. Is the writer able to organize the material?

For example: Can the writer analyze complex tasks into sub-tasks?
Keep directions simple?

Can the writer sequence information
Procedural instructions must be presented on the order they are to be performed.

b. Conciseness

Can the writer write clearly and concisely?

For example: Irrelevant nice-to-know information should not be interspersed with need-to-know information.

2. Language and style

Vocabulary is simple and straight forward.

Syntax not complex

For example: Sentences short (Average 22 words or less)
Paragraphs (should be less than 60 words)

Ideas in each sentence are in a logical order

Spelling is accurate

Grammar and usage correct

Punctuation correct.

3. Format

Does each direction start on a new line?

The test required the applicant to write a set of directions for two tasks from a list of six common daily tasks that all applicants would be familiar with. These included tasks such as filling a car's gas tank or getting cash from an automated teller machine (ATM). The EEOC guidelines prohibit hiring tests which are based on material the applicants could only acquire by either working in the company or training with the company for the job (Park, Dawis et al 1986). Consequently we tried to select tasks that would not favor any one group.

Fifteen volunteers in jobs most similar to the jobs the test was to be developed for were asked to take the writing test. Each candidate's writing sample was rated according to the "plain language" criteria in Table 1 above by three independent raters all Ph.Ds or Ph.D. candidates in Adult Education and HRD.

The raters made notes on how they had scored the tests and the relative ease with which each criteria was applied. It soon became apparent that some of the plain language criteria were not relevant to writing sets of instructions. The test simplified and revised to include only three major sets of criteria that were most reliable and had most usefulness in judging the way instructions are written. A set of instructions provide a much more limited sample of writing behavior than traditional continuous prose.

The revised test was then given to fifteen additional volunteers and a final version was developed. This version was then used on two consecutive groups of 15 and 11 applicants, these were independently scored. We compared the interrater reliability of the scoring system and ran correlations on each set of scores using the EXCEL program for Macintosh.

The performance of the candidates on the test and subsequent job performance appraisals are being collected to establish concurrent validity for the test.

Results

This case study is intended as a guide that will enable HRD specialists to develop a content valid and reliable test of writing skills that their companies can use to ensure that those hired to write industrial process sheets, inspection sheets, safety information and warnings as well as more sophisticated training materials will have the skills they need.

Judging writing skills and assigning a score to each plain language category proved to be difficult. The final scoring categories were developed after the initial trial of the test are given below. All three raters agreed that the following were easy to apply.

Criteria	Organization (50 points) All steps in the correct order and present	Language & style (30 points)	Jargon (minus 10 points)	Spelling (minus 1 per instance)	Grammar (-30)	Total score

Interrater reliability on the first set of writing samples was r=.6. After a discussion of the criteria used for scoring and a more detailed set of instructions was added the correlations obtained were .74. If the top three and lowest three scorers were considered separately the correlation is .81.

Based on these criteria we are confidant that we identified the best writers and these are clearly distinguishable from the rest. Our top scorers wrote well. The instructions to the applicants were clear and easily followed. The instructions to the scorers easy to use.

However, whereas the top writers and the lowest were easily distinguished, the same could not be said for those who scored in the middle range. The interrater reliability tells us that the level of variability would be unacceptable if the writing test were the only criteria used in hiring. Rather it identified those applicants who were qualified to handle the writing responsibilities required of them. It also disqualified those with poor writing skill.

Ultimately, the concurrent validity offered on on-going success on the job and good performance appraisals are needed before this test can be used by other companies. One way of improving interrater reliability is by developing stricter more detailed scoring criteria that are explained clearly and give less leeway to scorers.

The test we developed was relatively cost effective and proved to be easy to use. Initial reaction by the applicants was favorable. Once applicants were given information on how the writing was to be judged and who was doing the judging, initial fear levels were lowered. There was some unhappiness on the part of long time workers who had hoped for promotion within the company but who could not write at an acceptable level. Commonly in HR, trainers are hired from the shop floor. Although excellent workers, they have no concept of how to write instructional material. Increasingly effective communication skills orally and in writing are vital to manufacturing efficiency especially in team organizations.

Importance and Interest to HRD Professionals

More and more employers are recognizing the need for effective communication and written instructions at all levels of company operation. As more training departments shift from behaviorist to cognitive approaches to training the need for writers who can translate fairly sophisticated concepts, such as statistical process control, for unsophisticated learners increases. Finding a practical method of testing writing skills is increasingly needed. This paper presents a promising approach since it requires applicants to write rather than simply identify grammatical or spelling errors in writing samples, a technique used in standardized multiple choice writing tests. It also uses a set of criteria more suited to business use than the standards frequently used to judge creative writing or other narrative prose.

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Bringing Cross-Cultural Sensitivity to Human Resource Development: an Example from the Classroom

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Much is being written about the need for cross-cultural sensitivity. However, it can receive incomplete address in terms of HRD. Cross-cultural awareness can end up being reduced to principles and formulations tha t can oversimplify the realities. This research outlines a classroom based case study in curriculum design for global HRD. It emphasizes the importance of preparing HRD professionals for the complexities of the cross-cultural setting.

Globalization is increasingly viewed as a critical dimension of Human Resource Development. In 1994, 400 HRD executives were asked to identify trends that will influence workplace learning and performance in the next five years. Most respondents said that the most significant business trend is the global economy and its demands (Training and Development, May 1994). Even given this perceived significance, the degree of emphasis being assigned to this area is highly uneven. Where globalization is emphasized in relation to HRD, it tends to occur without deep sensitivity to cross-cultural differences. A CPC Foundation/RAND Corporation Study (1994) involving research in 16 major US-based corporations and 16 leading academic institutions found only limited emphasis being assigned to global factors.

Given the emphasis on cross cultural competence as the new human resource requirement for internationally competitive firms, it is surprising that prior cross-cultural experiences (e.g., study abroad programs) and foreign language proficiency received relatively low ratings as predictors of workplace effectiveness.

There can also be an unawareness of the research in the cross-cultural arena (e.g., Hofstede and Trompenaars). Where there is some knowledge of cross-cultural differences, it can be used in a one-dimensional way. In the area of cross-cultural team building (and this is a key emphasis area as companies become more and more global), the sole need can be viewed as cross-cultural mixing of team composition to provide a complementary fit among cultural characteristics. It can occur without any regard for the cross-cultural make up of the clientele groups to be served or learning style preferences of team members in relation to the tasks involved. In some cases, it becomes a matter of simply viewing the relationship of the national characteristics of the learners to those of the trainers. This sidesteps the significance of understanding the multiple cultural identities involved (e.g., local, culture, corporate culture, religion, class system, role of women in the society).

Data that does exist (e.g., Hofstede's empirically derived dimensions of national culture) can be used in a way that suggests that all members of a national culture relate to the world and others in similar ways. Anyone who has studied the data bases associated with the research of Trompenaars and Hofstede will readily appreciate that to extrapolate the generics of nationality gleaned from such research to all members of a society is specious. It can also be highly misleading. The researchers, themselves, caution against such a generalized application of their research findings.

Theoretical Framework

Hofstede (1980) posits that "Every person's mental programming is partly unique, partly shared with others" (p. 15). The shared portion he refers to as "collective mental programming." He

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Methodology

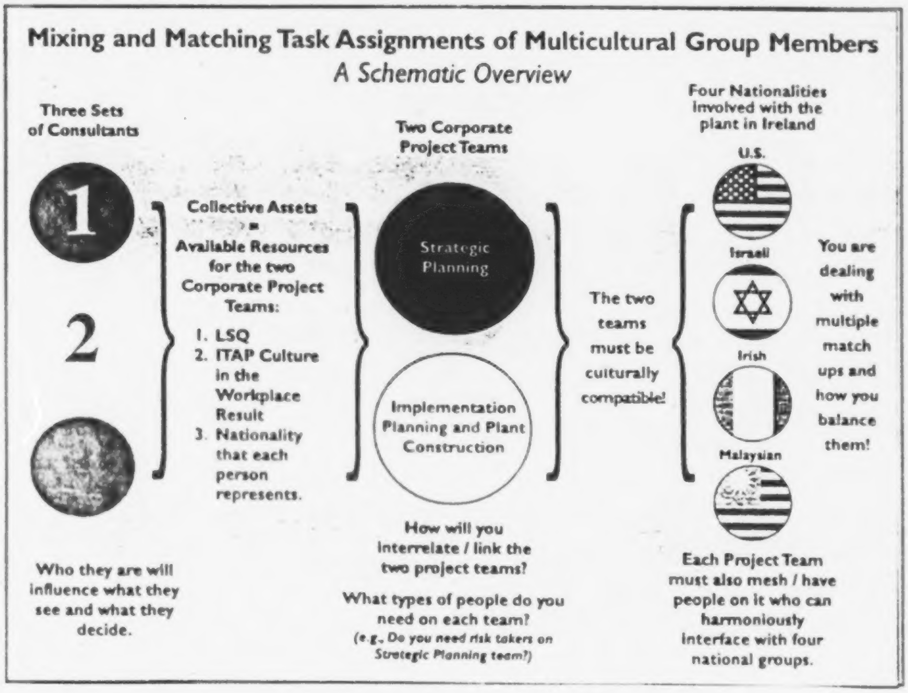
Thirteen graduate students, four of them pursuing doctorates, enrolled in a Global HRD Course at Virginia Commonwealth University, served as the test group for a new curriculum model. Three of the participants were international students (England, South Africa, China). At the beginning of the semester, each student completed a Honey-Mumford Learning Style Questionnaire (LSQ) and a Culture in the Workplace (CW) survey instrument developed by ITAP International at Princeton, New Jersey. The ITAP Questionnaire contains 24 questions and has been in use since 1989. It, in effect, replicates the questionnaire used by Hofstede. It was developed with his knowledge and support.

Results of the CW survey were provided to the class in a way that plotted results three ways: (a) as if the student were a nation; (b) as a member of the class (profiled as if it were a nation); and, (c) in relationship to the countries of Japan, Germany, Brazil, Sweden, South Africa and the United States (the professor's choice in order to show wide contrasts).

Students were also administered the LSQ. It plotted students versus the four basic learning style preferences (Activist, Reflector, Theorist or Pragmatist).

Students were assigned to one of three "action learning sets" in order to blend their learning style preferences and CW survey derived characteristics in a way that could draw strength from diversity. They were later given a "Team Exercise in Mixing and Matching Task Assignments of Multicultural Group Members." This was a highly complex exercise designed to bring together primary considerations in determining the best way to mix and match cross-cultural participants and their learning styles in a team exercise.

This role play centered on the construction of a world-class semi-conductor plant in Ireland. Those to operate the plant on completion were to come from Ireland, Israel, Malaysia and the United States. Each action learning set was to begin by taking the class assets (actual people), together with their CW survey results, learning style preferences and designated country (each student was assigned a nation to "adopt" and learn about from an HRD perspective during the semester).


Mixing and Matching Task Assignments of Multicultural Group Members
A Schematic Overview
Three Sets of Consultants
1
2
Collective Assets = Available Resources for the two Corporate Project Teams:
1. LSQ
2. ITAP Culture in the Workplace Result
3. Nationality that each person represents.
Who they are will influence what they see and what they decide.
Two Corporate Project Teams
Strategic Planning
Implementation Planning and Plant Construction
How will you interrelate / link the two project teams?
What types of people do you need on each team?
(e.g., Do you need risk takers on Strategic Planning team?)
The two teams must be culturally compatible!
Four Nationalities Involved with the plant in Ireland
U.S.
Israeli
Irish
Malaysian
You are dealing with multiple match ups and how you balance them!
Each Project Team must also mesh / have people on it who can harmoniously interface with four national groups.

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administered a questionnaire to 116,000 people in 50 countries (all IBM employees). It led Hofstede to the identification of four dimensions of culture: Power Distance, Uncertainty Avoidance, Individualism and Masculinity. Power distance can be defined as the degree of inequity in power between a less powerful individual and a more powerful other (p. 71). Uncertainty avoidance implies uncertainty in the behavior of oneself and of others. Totalitarian ideologies try to avoid this uncertainty (p. 111). Individualism connotes the degree to which the individual is inclined to operate on his or her own (low context) versus adopting a more collectivistic outlook (high context). The final dimension refers to masculinity versus femininity. In this case, Hofstede is defining masculinity as more assertive and femininity as more nurturing.

Hofstede later added a fifth dimension (1993, p. 90), long-term versus short-term orientation. This took an Eastern slant rather than being founded on Western beliefs. This research addressed students in 23 countries. This Confucian-based dimension demonstrates that the most pronounced long-term orientation in the world is resident in China, closely followed by Japan.

The Hofstede research, by virtue of its focus on the employees of one company (i.e., the original four dimensions), is arguably skewed because of the non-representativeness of the sample. It fails to cover the full socio-economic spectrum of the national cultures involved (e.g., India). Its generality also obscures the fact that a nation can have rather distinctive subcultures (e.g., China and South Africa). The Hofstede research is becoming dated given the 15-year time lapse since primary data collection and analysis. Hofstede is in the process (1996) of designing a follow-up study.

Trompenaars' model, covering seven provinces, shares few commonalities with Hofstede's framework. The only precise match is in the area of individualism versus collectivism. The fact that Trompenaars used a survey instrument available only in English (Hofstede's instrument was translated into a variety of languages) tends to create biased results.

No construct answers all needs. While the Hofstede data base is one of only two major data bases in the cross-cultural arena that exists (Trompenaars is the other) and unquestionably useful, it does not take into account individual learning style differences. Learning style preferences of individuals can provide a useful gauge in relation to assigned tasks. As is true of Hofstede's dimensions, you can find a full range of individual learning style differences within the same national culture. The Honey-Mumford Learning Style Questionnaire (LSQ), built essentially on Kolb's research base, can answer a part of that need. The LSQ also provides an index to how given individuals communicate and interact with their world. This can be a useful gauge in determining how to engineer group composition to avoid over concentration of like styles and provide for a mix of complementary styles. The research by Michael Hoppe (1990) is instructive in that it uses a survey instrument, developed with Hofstede's knowledge and support, that incorporates the Kolb Learning Style preferences into questionnaire design in treating cross-cultural differences and learning style preferences in juxtaposition.

Research Questions

1. Is there a way to teach HRD professionals the importance of using and incorporating multiple reference points in arriving at a reasonably accurate cross-cultural perspective in given situations?

2. How can you better isolate *specific* cultural characteristics of an individual in relationship to Hofstede's dimensions without defaulting to the global Hofstede outcomes (1980) that may not properly type classify an individual?

3. How can you realistically replicate such challenges in educating graduate level HRD students (Masters and Ph.D.) to the intricacies of cross-cultural and learning style differences?

4. What patterns can be isolated that show linkage between the cross-cultural dimensions and learning style preferences?

As a result of their set assessment, they were to assign individuals to one of two project teams (Strategic Planning and Implementation). The complexity of the challenge given to the students can be seen in the following diagram.

The students needed to give particular attention to how their own predilections within the action learning set to which they were assigned might influence/filter how they went about assigning assets to the two project teams.

It stressed the criticality of self-awareness as the first step to cross-cultural sensitivity.

Other subtleties included the need to not only consider compatibility within the task forces but between them and in relation to clientele groups. The problem solving model was designed to show the need for ***multiple matching and blending*** when dealing with the creation of high performance cross-cultural teams.

In a similar vein, students were given several other realistic scenarios to deal with during the course:

1. Euro-Disney and the problems related to its development in France. This real life example gave students an opportunity to probe the planning process used to implement the Euro-Disney concept and its cross-cultural sensitivity (and lack thereof). Students also pulled together current material on Euro-Disney from the World Wide Web, thus learning just how much material is available in dealing with companies and cross-cultural issues.

2. Students prepared a plan for expatriation and repatriation as Siemens Corporation engages in a joint venture with Motorola in Richmond, Virginia. Contact was made with the Siemens-Motorola HR team in determining the amount of employee exchange to occur. Student Action Learning Sets presented their expatriation/repatriation plans as if to the top leadership of these companies.

3. The final course exercise asked students to role play as members of a vender firm offering global HRD services. They were to respond to a request for proposal by McKinsey Inc. as the general contractor/consultant firm to a consortium of international interests gearing up to establish a series of plants in the Eastern part of Europe (Romania, Poland and the Eastern part of Germany). These plants were to produce anti-pollution and environmental clean up related products. Collaborators in the enterprise from the standpoint of technology included companies in Norway, Belgium, Switzerland and the United States. Primary investment capital came from Kuwait, with Siemens of Germany holding the major contract for plant development. Students were expected to balance a variety of factors, advise on the best way to deal with negotiations and determine how and where to conduct the necessary training programs.

Each student participated in an oral presentation to the professor as a member of an action learning set. The professor played the role of CEO of the HR firm. They also submitted individual draft memoranda to the CEO of the firm as a recommended response to the McKinsey Inc. request for proposal.

Results and Conclusions

One objective of the main core exercise described was to underscore the danger of type classifying individuals based on their nationality (Hofstede's Dimensions), since individuals within a culture can fall anywhere along the continua. You can have a person who is highly individualistic as part of a collectivistic culture. This was clearly dramatized even though the class sample is too small to serve as a true measure. It became very clear that if task force assignment decisions in the exercise had been left to the global national index values of the basic Hofstede research that the result would have frequently conveyed the individual characteristics inaccurately. For example, the Hofstede value for masculinity (called achievement in the ITAP CW Questionnaire) in the United States is 62. The higher the value the more task focus as opposed to relationship orientation is involved. The overall class index value based on the CW survey was 16 on this dimension (by comparison, Sweden is the most feminine country in the world based on the Hofstede research with a value of 4). The largest number of class members were clustered at an index value of 10. In other words, this group of students has a relationship orientation far removed from what the Hofstede research assigns as an index value for the United States. Therefore, when considering this group of individuals in relationship to a real world situation similar to the exercise, team assignments based on Hofstede's basic research results would have been far off the mark.

There was a closer correlation between the US value on power distance and the class result. On the other hand, the class tended to be even less risk adverse than Hofstede's value for the United States. The individualism results for the class were below the Hofstede result, albeit marginally in some cases. Therefore, the class is more willing to take risks and more collectivistic (high context) than what Hofstede's research attributes to the United States.

Even though the number of international students was small, the results were rather interesting. It showed again the danger of reflexively assigning the overall Hofstede research results for a national culture to specific members of that culture. The Chinese student was far removed from Hofstede's index values for China, especially in terms of uncertainty avoidance. The British student was far off the mark in masculinity, while closely matching with the basic Hofstede dimensions of power distance and individualism for the United Kingdom. The South African was significantly different from Hofstede's dimensions for her country in all areas. It may be that students from other countries are different than the index values arrived at by Hofstede in part because of the act of self-selection in pursuing an overseas educational experience. A student from China, for example, may turn out to be less risk adverse by nature than is characteristic of other Chinese. It can take an act of personal courage to leave a strong family oriented culture to pursue studies in an unfamiliar cultural environment.

In terms of learning style preferences, the students were equally divided between strong activists and strong reflectors, and that was one factor in determining action learning set assignments. A number of students fell in the moderate range, meaning that they probably have the ability to swing into either an activistic or reflective mode as circumstances require.

Exercise results varied by action learning set, but there were also similar threads of logic running through their determinations. One set invited members of the class to validate their task force assignments (e.g., did they feel comfortable being assigned to the Strategic Planning Task Force rather than the Implementation Task Force?) Only one student crossed over to the other team. The point brought home here is that you should draw on *direct* knowledge where it is possible rather than simply tabulating index values in arriving at cross-cultural team assignments. The students had arrived at this judgment as a result of their own deliberations during exercise play.

In terms of correlation between CW survey results and LSQ results, a few tentative linkages could be identified in this specific group of students. Low theorists had generally lower certainty scores. Low pragmatists had higher individualism scores. Strong reflectors had higher certainty scores and low reflectors had lower certainty scores. No relationship of reflection to individualism or achievement (masculinity) was evident. The value of using both LSQ and CW survey results for team assignments proved useful as perceived by student participants.

As already indicated, students were given several complex cross-cultural scenarios to work through. As the semester progressed, the students expressed growing confidence in their ability to make wise choices. In dialogue with well known authorities on global HRD, either during their visit to the classroom or over a speaker phone, students expressed a feeling of broad familiarity with the terminology and critical factors to be considered in global HRD. The requirement to deal with real world challenges in an action learning context was identified by the students as the most valuable aspect of the course. Some of the actual written student comments in providing feedback at course completion suggest the strength of this type classroom format in teaching global HRD.

1. The presentations in this class have turned out to be quite different from those I've seen in other classes. The students were required to read fast, think fast, and act fast as an individual and as a group; decision making skills have proved important. . . . this course has stimulated in me an eagerness to learn more, to act, and to become a more flexible, open-minded and capable person. It has also instilled more confidence in me.

2. I can now say that in my entire academic career I have never been quite so challenged. I honestly had trouble keeping up. I'm certainly happy I had this experience, since it is such useful information in terms of knowledge gained and skills practiced.

3. This course was a valuable learning experience. It forced me to critically think about many diverse issues during the span of the course, I was challenged to reflect on many of the concepts that I take for granted. . . gaining exposure to other perspectives was extremely valuable. Team members often took completely different paths to reach the desired objective.

4. I felt most engaged in the learning experience during two of the action learning set projects, including mix and match (The Ireland scenario). The experiences allowed me to explore my strengths and weaknesses, investigate my cultural perceptions and biases, utilize my team skills, as well as learn the various levels, components, and issues involved in addressing global HRD concerns within an organization or corporate expansion . . . certainly one of the major teaching points of this class I have integrated into my own experiences is the idea that not everything that should be learned can be learned before one works in another culture.

5. Throughout the course students were required to work in small groups. . . . because students worked together on several group projects, they were able to bond.

6. This course engaged me constantly from the beginning. . .·. I felt as if this class gave me a fantastic opportunity to learn more about the world and its various cultures . . . my learning in this course was vast and ran the spectrum of group activity learning to individual exploration.

7. I believe that as a result of taking this course I will be better prepared than any of my other countrymen to deal with any repatriation issues that I will have to face upon my re-entry into (country).

8. I really got to know my classmates, since we met quite frequently, working on group projects and I got to talk to people all over the world researching my final paper.

9. I have had some fantastic conversations with people from other countries. I have opened up the box and been able to see outside the world I grew up in . . . another thing I have identified as an incredible learning experience during the course can be identified by the word stretch". I have discovered the excitement and benefits of stretching outside of my well-ordered, little, left-brained world into the world of "taking risks".

How this Research Contributes to New Knowledge in HRD

With all the evidence pointing to the importance of globalization to HRD, we are still embryonic in applying knowledge of cross-cultural differences. The research base itself is thin, and the two major researchers in the field thus far (Hofstede and Trompenaars) do not share a common modality. In contacts with some leading corporations, the researcher found that there was no well defined HRD strategy for dealing with cross-cultural sensitivity in determining the composition of cross-cultural teams.

This particular research is significant because it underscores three essential dimensions that relate to HRD in cross-cultural settings: (1) You cannot safely assign global values to individuals (Hofstede's research). You need a *direct* index to the individual; (2) It is *not* a case of considering just cross-cultural compatibilities. You must also index to external clientele groups and their cross-cultural composition. It is a case of matching multiple identities. It can be like a Rubric's cube. As obvious as this may seem, mixing of multiple identities is frequently not a part of the equation; and, (3) We need more research around the relationship of cross-cultural characteristics to learning style preferences. This research and the research by Hoppe (1990) suggests that this is fertile ground for research inquiry. The conflicting modalities of Hofstede and Trompenaars, while useful, can be extremely misleading when used in isolation and in the absence of *direct* knowledge of the individuals involved.

Finally, this classroom based case study points to the need to incorporate real world challenges in curriculum design. Global HRD is best taught by giving the students "hands-on" experience in dealing with realistic scenarios. Associated small group decision making activity, particularly in a multi-cultural classroom provides students a direct awareness of the complexities on dealing with HRD in a cross-cultural setting.

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The Analysis of the Effects of Experiential Training on Sojourners' Cross-Cultural Adaptability

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This study compared the cross-cultural adaptability of international student sojourners who received cross-cultural training with those who received no training. The treatment group included 42 graduates of a weeklong experiential crosscultural training program at the Meridian International Center, called Discover the United States. *The control group of 39 similar sojourners, received no training. The hypothesis was that Meridian program participants would demonstrate greater cross-cultural adaptability than a similar control group, as measured by the Cross-Cultural Adaptability Inventory (CCAI).*

Background of the Problem

The movement of people across national and cultural boundaries is more active than ever before. Each year millions around the world relocate from country to country (Kim and Gudykunst, 1988). The number of foreign students attending schools in the United States has increased to a record of over 407,000 in 1990 and is rising steadily. Sweeping political, economic, social and technological changes have created a world where instantaneous communication is not only possible, but essential. At the same time businesses worldwide have been forced to reevaluate their products and markets from an increasingly global perspective. This has required thousands of staff persons and managers from countries worldwide to relocate each year (Blakeslee, 1991). Increased internationalization has led to the need for greater interpersonal cross-cultural contact and effectiveness.

It appears, however, that many of these attempts at cross-cultural interactions do not succeed. Studies of cross-cultural negotiations find cross-cultural differences at the heart of many business failures (Black, 1988). It has been estimated that between 16 and 40 percent of all expatriate managers who are given foreign assignments end these assignments early because of their inability to adjust to the foreign environment, or because of their poor performance (Tung, 1981; Black, 1988). In Saudi Arabia, Storti, (1990, p.xiv) reports that an average of 68 percent of those Americans who have no cultural training fail to complete their contracts. As high as 50 percent of those who do not return early function at a low level of effectiveness (Copeland & Griggs, 1985). Yet, governments, corporations and educational institutions spend enormous amounts each year to create and maintain global connections. Moreover, studies by Copeland and Griggs, Harris and Moran, and Misa and Fabriacatore, as summarized by Black and Mendenhall (1990, p.114) show "the cost of a failed expatriate assignment is $50,000 to $150,000." The direct costs to U.S. firms of failed expatriate assignments has been estimated by Copeland and Griggs (1985) at over $2 billion per year. Added to this are the indirect costs of failed and missed opportunities, poor public relations and intercultural mistrust.

Cross-cultural training has long been advocated as a means of facilitating successful cross-cultural interactions and reducing culture shock (Brislin, 1981; Harris & Moran, 1979; Tung,1981; Grove,1989). Yet only 30 percent of U.S. managers sent on overseas assignments receive even the most cursory of cross-cultural training prior to their departure (Black & Mendenhall,1990). For student sojourners at some institutions, the percentage may be even less.

While cross-cultural training is not widely conducted for U.S. citizens working and studying overseas, the availability of programs for people coming to the U.S. is available, but the impact is questionable. An informal telephone survey by one of the researchers (Goldstein, 1992) of the ten colleges and universities with the largest foreign student populations in the United States indicate major differences in the ways that cross-cultural orientation/training for foreign students is addressed.

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One university, with over 5,000 international students, appears to devote about 30 minutes to the topic. Another university holds a weeklong orientation each fall devoted exclusively to cross-cultural issues. In both cases about 80% of the eligible population attends the training which is available. The survey also indicated that tens of thousands of student sojourners receive little or no cross-cultural training.

It seems clear that cross-cultural training is not widely utilized or available in either the corporate or academic environments. While not fully understood, several explanations can be posited. There may be a lack of appreciation for the value of, or need for cross-cultural training. It may be difficult for an manager or student who has never lived or studied abroad to empathize with the disorientation and distress which occurs when one has entered a new culture. Tung, (1982) suggests the prevalent attitude that the training is perceived to be ineffective. Some schools focus primarily on improving the speaking and writing skills of foreign students. Certainly lack of knowledge or staff, and budgetary or time constraints could also be cited.

In this study the potential effects of cross-cultural training were studied by examining the week-long program *Discover the United States* at the Meridian International Center in Washington, D.C. (formerly the Washington International Center). This program, for participants from around the world, utilizes in various ways each of the five training approaches in Tung's (1982) typology. These include area studies, culture assimilators, language preparation, sensitivity training, and field experiences. It also utilizes the film/discussion approach. Rather than the lecture approach, still common in much cross-cultural training, this in-depth, multidimensional approach appeals to a variety of learning and personality styles.

The impact of the training was measured by the Cross-Cultural Adaptability Inventory (CCAI), developed by Kelley & Meyers (1987). This self administered inventory provided individual scores in four dimensions: Emotional Resilience, Flexibility/ Openness, Perceptual Acuity, and Personal Autonomy. This study also sought to determine whether the demographic variables of country of origin or gender influenced the cross-cultural adaptability of student sojourners.

Research Questions

The objectives of this research were to identify the impact of cross-cultural training on adaptability, and determine the influence of demographic variables on cross-cultural training and adaptability. Three research questions formed the basis of the study. First, does in-depth experiential cross-cultural training improve cross-cultural adaptability, as measured by the Cross-Cultural Adaptability Inventory (CCAI)? In order to determine this, participants in an in-depth cross cultural training experience were compared to two separate groups - a control group made up of similar individuals, and an assessment of the scores of the international students and sojourners used by Kelley and Meyers in developing the CCAI. Second, do the specific demographic variables of country of origin and gender affect cross-cultural adaptability? This was assessed by comparing the CCAI scores of all study participants to determine whether country of origin or gender affected cross-cultural adaptability. Third, since the program is taught by a variety of instructors, are there any major differences each week in the program format which might affect the cross-cultural adaptability of participants? This was explored through a format analysis of four separate weeks of training.

Review of the Literature

The experience of the cross-cultural sojourner has only been discussed extensively in the academic literature since the early sixties. Oberg's (1960) early description of the phenomenon of culture shock has become a classic for disciplines having interest in the sojourner's experience. Storti (1990) notes, though, that it has been the topic of popular culture for centuries, i.e., witness the tales of Rudyard Kipling, Issac Dinassen, D. H. Lawrence, and Mark Twain.

It has been suggested that cross-cultural research focusing on cross-cultural international human resource management is in a pre-paradigm state (Black & Mendenhall, 1990). A review conducted by Adler (1983) of articles in 24 top management journals revealed that less than one percent dealt with cross-cultural issues. Between 1984 and 1988 only nine percent of the articles in the major international business journals dealt with international human resource issues, and none were theory building (Black & Mendenhall, 1990).

Regarding intercultural training and education, Casse (1979) notes that intercultural trainers and individuals working in international organizations should have four key skills. They should be able to understand the cultural meaning of their behavior, empathize with others and understand their behavior using their own cultural frame of reference, recognize the impact of their behavior on others, and adjust to the specific cross-cultural situations in which they are involved (p.252).

Paige (1986) has also addressed twelve characteristics which make for an effective and competent cross-cultural trainer. These include tolerance for ambiguity, cognitive and behavioral flexibility, personal self-awareness, strong personal identity, cultural self-awareness, patience, enthusiasm and commitment, interpersonal sensitivity, tolerance of differences, openness to new experiences and people, empathy, sense of humility, and sense of humor. Though targeted to trainers, these characteristics are taken directly from the literature on cross cultural adjustment, and were later seen to relate closely to Kelley and Meyers' (1987) work in cross-cultural adaptability.

The focus of cross cultural orientation training tends to be on specific items and concepts the participants will need to know to live and adapt effectively in the new culture. For example, in Aramco Oil Corporation's orientation program for staff who will be moving to Saudi Arabia, explanations of perceptions such as time are given in the sequence, "This is how you would do something, this is how a Saudi Arabian would do it, and this is why" (Lee, 1983, p. 22). The Meridian International Center's "Discover the United States" program encompasses both training (skills development) and orientation (cultural sensitivity). One of its key goals is to help participants understand USAmerican values. It also imparts many practical suggestions for interacting with others and living and studying in the United States.

In summary, since cross-cultural migration, international business and scholarship are likely to continue to increase, research must be conducted to examine the experience of sojourners. There are a number of approaches which may be utilized to assist the sojourner in adapting to a new culture. These range from formal college courses and in-depth training programs to briefings and self-study suggestions. The decision regarding which options to use will likely be based on the goals, values, intercultural expertise and budgetary/time constraints of the institution or department.

The CCAI

The primary instrument utilized in this study was the Cross-Cultural Adaptability Inventory (CCAI), developed by Kelley and Meyers (1991). Of the available instruments, it appeared to most closely match the skills and attitudes provided in the *Discover the United States* program. Each statement on the CCAI represents one of four dimensions measured by the inventory in separate scales: emotional resilience, flexibility/openness, perceptual acuity, and personal autonomy. To complete the inventory, answers are circled on a scoring sheet with six options ranging from definitely true to definitely not true (e.g., "I believe I could live a fulfilling life in another culture.").

Since the instrument was first developed by Kelley and Meyers in 1987 it has undergone two revisions. According to Kelley and Meyers (1991, p.5) the CCAI was designed to be used in cross-cultural training to help people to: (1) better understand what we know is important in living and working effectively among those of other cultures (based on the research literature), and (2) learn useful information about themselves that can guide them in the development of cross -cultural abilities and skills. The CCAI was chosen as the measurement for this study for four key reasons. First, statistically the CCAI is a reliable and valid instrument. The instrument has a high overall reliability (.90), and was normed on a large sample population of 653 individuals, including 129 international students and sojourners from 38 countries who were quite similar to the sample population of this study. The individual scale reliability (standardized alpha) measures were: Emotional resilience (ER, 18 items), .90; flexibility/openness (FO, 15 items), .82; perceptual acuity (PA, 10 items), .78; personal autonomy (PA, 7 items), .68; total score (49 items),.90.

The second reason for choosing the CCAI was that, though the concept of cross-cultural "adaptability" (as opposed to adjustment) is fairly recent in the literature, the instrument has a strong theoretical base and is well grounded in the state-of-the-art of cross cultural theory and practice. Third, in a series of interviews conducted by the researcher with seven senior interculturalists, including Margaret Pusch, author of, "Multicultural Education; a Cross-cultural Training Approach" (1981), the CCAI was suggested as the most valid, well researched and viable instrument for the assessment of cross-cultural effectiveness. Fourth, the instrument is relatively easy to administer by mail, and with its scoring system provides four clear and well documented criteria upon which individual subjects and groups can be assessed and compared. It also had the advantage of offering an incentive to study participants with the individualized profile provided. In sum, the author and the advisors to this study were confident that the CCAI was the most appropriate instrument to be utilized in this study.

Methodology

The study compared two similar groups of student sojourners who completed the Cross-Cultural Adaptability Inventory (CCAI, (Kelley & Meyers, 1989). The treatment group of 42 individuals attended the week-long intercultural training and orientation program *Discover the United States* at the Meridian International Center in one program year (September to September). The sample population had to meet the following criteria: (1) Had completed the entire "Discover the United States" training, (2) planned to stay in the United States for a minimum of one year, and (3) Listed "study" as their primary reason for coming to the United States.

A control group of 39 individuals who had received little or no training upon arrival to the United States were matched as closely as possible to the treatment group. The primary criteria for matching included gender, country of origin and arrival date in the United States. Age and education were secondary considerations (Refer to Table 1). Sojourners from either group who had lived in the United States for three months or more on a prior visit were disqualified, as this might give them an adaptability advantage over other sojourners (Klineberg and Hull,1979).

Table 1
Demographic Composition of Treatment and Control Groups by Gender

	Treatment		Control	
Gender	Frequency	Percent	Frequency	Percent
Female	12	28.6	9	23.1
Male	30	71.4	27	69.2
Unknown	0	0	3	7.7
Total	42	100.0	39	100.0

Nearly all of the participants in the study, both experimental and control, were graduate students sponsored by the U. S. Agency for International Development (U.S.A.I.D.) or a similar agency. They were established professionals in business, government or academia, with an average age in the early thirties. They were highly educated, e.g., five physicians, two attorneys, and two others with advanced degrees.

The design, with a total sample size of 81 student sojourners, allowed for two different sets of comparisons. First, comparison of the treatment and control group compared the mean scores of the CCAI for each group. Second, the treatment group scores were also compared as a group to the standard scores for international students, as measured by the CCAI, to determine the relationship of the treatment group for this study with the norming group for the CCAI.

The study was conducted in four phases. The "pre-study" phase included all activities related to the identification and recruitment of the treatment group, and a pilot study of the administration of the CCAI to identify any possible difficulties with test administration, language or scoring. The second phase included the mailing of the CCAI, including a supplemental seven question attitudinal survey, to the treatment and control groups. In phase three the data were tabulated. The participants were mailed an interpretation of their individual survey results. Phase four consisted of a statistical analyses of the accumulated data, and the reporting of the findings to the participating agencies and organizations.

Data Analysis

The primary quantitative data for this study consisted of the individual and group scores on the four components of the CCAI. For the comparative analysis of the CCAI data, significance tests of correlation and t tests for independent sample groups were conducted between the treatment and control groups. Testing the treatment group versus the control group gave significant results in each of the four dimensions of cross-cultural adaptability at the .05 level of significance. This was determined by utilizing the t-test for two independent sample groups (refer to Table 2).

Table 2
CCAI Data for Treatment and Control Groups

CCAI Scales	Treatment (n=42) Mean	SD	Control (n=39) Mean	SD	T-Statis.	P-Value
Total	231.95	21.06	216.87	16.43	-3.57	.0006**
Emotional Resilience	82.57	9.89	77.77	7.61	-2.44	.0171*
Flexibility Openness	68.05	7.80	62.77	6.88	-3.22	.0019**
Perceptual Acuity	48.40	5.14	45.82	4.54	-2.39	.0192*
Personal Autonomy	32.93	5.08	30.51	4.70	-2.22	.0295*

* significant at $p < .05$ ** significant at $p < .01$

As illustrated in Table 2, for emotional resiliency (ER), the treatment mean (82.57) was significantly higher ($p < .05$) than the control mean (77.77). For flexibility/ openness (FO), the treatment mean (68.05) was significantly higher ($p < .01$) than the control mean (62.77). For perceptual acuity (PAC), the treatment mean (48.40) was significantly higher ($p < .05$) than the control mean (45.82). For personal autonomy (PA), the treatment mean (32.93) was also significantly higher ($p < .05$) than the control mean (30.51).

Thus, in comparing the cross-cultural adaptability of the treatment group to a similar control group, the results indicate that the treatment group was significantly higher. Each comparison of cross-cultural adaptability includes four scales, which provide a total of eight opportunities for comparison of difference. In each of the eight comparisons, the treatment group's scores were significantly higher than the control, and three of these were highly significant ($p < .01$). There was also a highly significant difference in total combined mean scores on all four dimensions.

In a causal-comparative analysis, the interpretation of findings requires some caution (Gay, 1987). It was difficult to ascertain definitively that the differences in the dependent variable, or CCAI scores were actually caused by the independent variable, training or no training. Ex post facto research attempts to determine the cause of, or reason for existing differences which, in this case are scores on the CCAI. Because of the careful matching and sample selection procedures, a primary, but not the only, difference between the members of the two groups was the presence or absence of the training.

It is not possible to determine exactly what aspects of the Meridian training are responsible for the significantly higher levels of cross-cultural adaptability that participants demonstrated over the control group and the test standard. Six possible explanations can be given. First, The program provides opportunities for participants to interact with their new environment and one another. Each interacts with other newly arrived sojourners, as well as host nationals, both staff and volunteers. This safe and friendly environment may increase emotional resilience and perceptual acuity and assist the sojourner in accurately predicting and understanding the behavior of people in the United States. It also may increase personal autonomy by serving as a starting point for the creation of shared networks (Gudykunst & Hammer, 1988), and encourage participants to interact with local people during their sojourn (Klineberg & Hull, 1979).

Second, the program increases the participants' knowledge of the host culture, thereby reducing their anxiety (Gudykunst and Hammer, 1988). Throughout the week-long program participants are given specific examples of what to expect in school, work and social settings. A variety of techniques, such as role plays and films help prepare participants to succeed in the new culture. These experiences can increase the sojourners self-confidence, and encourage them to become more flexible and open as they begin the process of adapting to their new environment.

Third, numerous opportunities to compare their lifestyles and values with each other, with the USAmerican culture might help the participants develop more personal autonomy. Fourth, the program encourages independent thinking and action, allowing the sojourners to achieve several small successes in the new culture. These successes may increase emotional resilience and produce a willingness to engage in further risk-taking in the placement community.

Fifth, many of the week's activities focus on the development of empathy for others, (in this case USAmericans) who are different. Interviews and interaction with classmates, volunteers, staff members and "people on the street" may also assist in developing better communication skills, heightening perceptual acuity and creating empathy. Bennett (1986) describes empathy as the most common form of adaptation, and these experiences may improve perceptual acuity.

Sixth, the experiential training approach appears to prepare participants for specific situations, such as classroom and dating etiquette. They are also exposed to attitudes they may face in the United States, among them being such factors as USAmericans' materialism, independence, and perceived need for privacy. It appears to equip them with skills and attitudes which are reflected in greater emotional resilience, flexibility/ openness, perceptual acuity and personal autonomy in the new culture.

Summary and Conclusions

This study sought to determine whether an in-depth cross-cultural training experience would affect the cross-cultural adaptability of student sojourners. It also assessed several components of a well established cross-cultural training program. Following are four conclusions based on the quantitative data and on the qualitative, descriptive analyses summarized on the preceding pages.

1. Student sojourners who attend the weeklong *Discover the United States* program provided by the Meridian International Center upon arrival to this country exhibit greater cross-cultural adaptability than a similar group of students who did not attend the training. This relationship is demonstrated by the significantly higher scores on the Cross-Cultural Adaptability Inventory (CCAI) of the program's graduates in every dimension of cross-cultural adaptability, including emotional resilience, flexibility/openness, perceptual acuity and personal autonomy.

2. Graduates of the program also appear to exhibit significantly greater cross-cultural adaptability than international student sojourners in general. This is demonstrated by comparing CCAI scores of graduates with those of the large group of well educated international sojourners who participated in developing the CCAI test standard. Again, graduates of the Meridian program scored significantly higher in every dimension of cross-cultural adaptability.

3. The treatment group appeared to gain in the dimensions of emotional resilience and flexibility/openness. In both comparisons of the four cross-cultural dimensions, these two were the highest scores; iIn three of the four cases they were significant at $p < .01$. These gains can perhaps be attributed to the program's experiential and interactive format which requires participants to actively assess and revise their perspectives about themselves and how to succeed in the new culture . It also helps prepare them in a proactive way for the inevitability of the symptoms of culture shock and the challenges they are likely to face.

4. There was no difference in cross-cultural adaptability, as measured by the CCAI between males and females, or by country of origin. This was demonstrated by an analysis of variance (ANOVA) which shows no difference between scores based on these variables. Again, the only significance

demonstrated was between the treatment and control groups, as described above.

As indicated by these data, the *Discovering the United States* program appears to do a very good job of preparing participants to study and live in a new culture by developing the key skills of emotional resiliency, flexibility/openness, perceptual acuity, and personal autonomy. According to Kelley and Meyers (1991) these skills are the major determinants of success when crossing cultures. The program also helps participants better understand the values and lifestyles of USAmericans and provides concrete information and experiences which aid in adapting to and enjoying university life in the United States.

The difficulties that sojourners face living, studying or working in a new culture have been well documented. This study demonstrates that an in-depth cross-cultural training experience can be quite helpful in developing both skills and attitudes necessary for success.

Recommendations

The findings and conclusions of this study suggest that in the interest of enhancing the experience of sojourners in foreign countries and promoting greater cross-cultural adaptability, the following recommendations be considered. First, since the study has demonstrated the value of in-depth experiential programs such as *Discover the United States*, cross-cultural training should be considered a priority for organizations which invest in the education and training of international managers and sojourners. Such training has been demonstrated to benefit graduates by assisting them to become more emotionally resilient, flexible and open, perceptually acute, and autonomous than similar persons lacking such training.

Second, organizations and schools that do not have an in-depth cross-cultural training program should consider developing and implementing a more comprehensive approach. This can be provided using in-house resources, or with the assistance of external consultants. An important step in this process would be to interview current international sojourners about their experiences in the host country and organization.

Third, in order to provide the most effective study or work experience for sojourners, a variety of opportunities such as pre-departure training, orientation and training upon arrival in the new culture, and ongoing training should be made available by host and sponsoring organizations. These experiences should be coordinated and build on previous learnings and experiences to provide reinforcement and ensure maximum effectiveness.

Fourth, organizations and schools should provide ongoing social and educational opportunities which allow the sojourners to interact with other sojourners and natives of the host country. This is also likely to increase social skills and cross-cultural adaptability.

Fifth, organizations with international managers, students, and staff should provide cultural awareness training for all those who will interact with sojourners. Certainly this type of training is important to supervisors and administrators, and college and university faculty, but also to all staff. Having the opportunity to interact with people who are cognizant of cultural differences and empathetic to the experience of crossing cultures may help sojourners to succeed in the new environment.

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Play Theory for HRD: A Conceptual Literature Review

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The purpose of this paper is to review the conceptual and empirical literature that undergirds the use of play in education and training. The connection between adult play and flow theory is explored and the creative personality is also examined.

Educators must be more creative than ever to meet the demands of changing employee work schedules. Play is a fun and interactive way to teach and learn. Games, one type of play, are popular among participants and trainers alike. However, their use among educators is limited. Training's 1996 Industry Report indicates that only 39% of companies with 100 employees or more are currently using games or simulations to teach.

Knowles (1978) proposed that the adult learner must be actively involved in the learning experience for an optimum transfer of knowledge to take place. Knowles' theory has been supported by studies that show that skills are retained better with practice and re-testing and when the teaching strategy actively involves the learner as a participant (Bowen, 1987; Klein & Fleck, 1990; Randel, Morris, Wetzel, & Whitehill, 1992; Whiteley & Faria, 1989). Furthermore, Knowles (1978) stated that the learning environment must be comfortable and exciting to the learner. This includes a variety of stimulations that appeal to many of the learner's senses, including the visual, auditory, and kinesthetic senses.

Tallman and Holt (1987) point out that "most programmers do not emphasize the transfer factor, but merely focus on program delivery. That is, what happens after the program" (p.15). Zemke and Gunkler (1985) note that "the quality of the original training will play a large role in how much transfer of training occurs" (p. 49). Using a list of dissatisfactions with conferences compiled by Finkel (1985), Tallman and Holt (1987) produced a listing of factors to consider to adjust program design. Two of these factors are especially relevant to instructional methods: design more modules that engage active audience participation and alter methods of presentations.

Tallman and Holt (1987) propose that a variety of teaching methods, particularly active learning, aids in the transfer of skills and knowledge. It is noted that research is slim but adult educators opt for active learning techniques because these techniques are believed to be more effective. The most common and overused method, lecture, has not been found to be effective in learner retention of material or subsequent transfer of learning. Tallman and Holt warn that trainers must strive to not let lectures dominate a program. Participants should be allowed time to be actively involved in the learning process through a variety of methods or problem-solving techniques. They point out that active learning can equip the learner with necessary skills to function more effectively on the job. Frequent practice provided helps the participant to "overlearn" the new skills so it becomes a regular part of the person's behavior.

One way to actively engage learners is to use play in training and development programs. But why don't trainers play more? Perhaps it is because the word "play" can invoke many misconceptions. Many think that play is only for young children. Play seems to be something that you should give up when you grow up (Provost, 1990). Suggesting that an adult is playing is risky business. Work is respectable, but play is not because play is easy (Rieber, 1996). These misconceptions are unfortunate because research on children and adults' play in anthropology, psychology, and education indicates that play is an important mediator for learning and socialization throughout life (Blanchard & Cheska, 1985; Csikszentmihalyi, 1990; Provost, 1990; Yawkey & Pellegrini, 1984).

Playfulness (Webster & Martocchio, 1992; Miller, 1973) and flow (Webster, Trevion & Ryan, 1993) have been found to relate to learning. Rieber (1996) describes that play is difficult to define but we all know when we see it or experience it. It is generally defined as having four

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attributes: it is voluntary, it is intrinsically motivating, it involves some level of active engagement, and it is distinct from other behavior by having a make-believe quality (Blanchard & Cheska, 1985; Csikszentmihalyi, 1990; Pelligrini, 1985; Pelligrini & Smith, 1993; Yawkey & Pelligrini, 1984).

Erikson (1972) suggested that the working adult views play as recreation, and as a separation from limitations occurring at work. It is common for people to define play as the opposite of work but this is misleading (Rieber, 1996). Blanchard and Cheska (1985) propose that work has the potential to be considered play and it becomes play when the job is so satisfying that getting paid is secondary.

Inspired mostly by the work of Sutton-Smith, current theories of play are generally organized around four themes: play as progress, play as power, play as fantasy, and play as self (Pelligrini, 1995). Play as progress concerns the belief that the purpose of play is to learn something useful. Play as power refers to contests or competitions in which winners and losers are declared. Play as fantasy refers to play's role in liberating the mind to engage in creative and imaginative thinking. Play as self values play's role as a way to achieve optimal life experiences. It is this last theme that is most focused on intrinsic worth of an experience (Rieber, 1996).

Csikszentmihalyi (1977) suggests that too often adult play has been construed in terms of children's play. He points out that adult organisms decrease their play and essentially play stops. The question remains "What happens to play in adulthood?" The word play invokes misconceptions. It traditionally has been viewed as an activity for children that you give up when you grow up. Adults are working, which is more respectable than playing. Play has also been labeled as being easy. However, adult activities that might be labeled as play, such as sports, music, and hobbies, are usually challenging and difficult (Rieber, 1996).

Freud (1908) observed that adults do not play. His statement was later modified and supported by Anna Freud's (1965) suggestion that childhood play is replaced by adult work. Anna Freud begins to describe a shift from play to work during latency years. "Direct or displaced satisfaction from the play activity itself gives way increasingly to the pleasure in the finished product of the activity, a pleasure which has been described in academic psychology as pleasure in task completion, problem-solving, etc." (p. 81).

Colarusso (1993) criticizes this developmental line of play ending in childhood rather than adulthood by pointing out that adults are involved in many games such as soccer, football, cricket, chess, cards, etc. Plaut (1979) recognized that adults do not stop playing by relating Freud's view that play was "inappropriate to adulthood" to the European culture's "highly ambivalent attitude toward pleasure and an elevation of work to a dominant position in its value system" (p. 219).

Play exists in various forms from early childhood through late adulthood. Although there are great similarities between some forms of childhood play and adult play, there are also considerable differences. Children play to master experiences which are too overwhelming to master easily (Waelder, 1932) and they play to engage and master developmental tasks (Peller, 1954). Ostow (1987) suggests several reasons for play to occur in both children and adults.

First, play provides a mechanism for disengaging from frustration and disappointment in the real world by providing an illusory gratification which reduces tension and distress. Second, play also provides relief from intrapsychic conflict by offering pleasurable alternatives. But most importantly of all, particularly for the adult, "Play seems to provide, not for the unrestrained pursuit of pleasure, but rather for the exposure to realistic or realisticlike challenges, the overcoming of which relaxes tension and replaces it with pleasure. . . Play is a simulated, attenuated, and controllable reality. When the pain becomes too great, or the threat too formidable, the play can be terminated" (p. 200). Ostow recognizes that both children and adults play for the same reasons, but he describes a qualitative difference in what they are attempting to master: "whereas children's play anticipates future, more difficult tasks, adult play attempts to master simplified versions of the external world, problems of limited complexity and posing limited threats. Under certain circumstances, adults too may fear assuming new tasks or roles, and use play to help them to master their fears either realistically by practicing the new roles or unrealistically by denying them" (p. 200).

Adult development theory suggests that adults are not dealing with simplified versions of the external world or problems of limited complexity and threats. Adults confront external realities and internal issues and conflicts which are as complex and difficult to master as those in childhood (Colarusso & Nemiroff, 1981).

Childhood play is usually described as consisting of two interlocking components: conscious or unconscious fantasies or wishes and physical acts which carry these into an observable enactment. However, motoric expression may be greatly minimized or entirely absent in both childhood and adulthood, although more so in adulthood. The motoric component may be expressed by others who act for the person at play, i.e. when an individual is at a sporting event. The motoric component may also be reduced because of the nature of the game being played. Board games require very little physical action. It is important to note that although games which require strenuous physical action are less common in adulthood, motoric expression remains a component throughout life, as exemplified by the 80-year-old golfer or tennis player (Colarusso, 1993).

Play is an attempt through enactment to master traumatic stimulation, the natural state of the child (Waelder, 1932) and to resolve , in both children and adults, internal conflicts which are generated by the engagement of developmental tasks. Those at play must recognize that what is being enacted is not real.

"Play stays too close to the drives to qualify as sublimation" (Neubauer, 1987, p. 4) but in its expression of the pleasure principle it serves as an experimental way to pursue the road to reality. Because adults have a more developed sense of reality testing and an increased capacity for sublimation they play less. But when adults do play, they play for the same reasons as children: to attempt to organize and control the intrapsychic world of drives and conflicts, expressing themselves, alone and with others, in gratifying ways (Colarusso, 1993).

The maturational and developmental changes in capacities and tolerance account for some of the differences between play in childhood and adulthood. Children are less likely to sustain the capacity to pretend than adults. Thus, adults can play for longer, uninterrupted periods of time even when intense emotional states or physical exertion are involved, i.e. attending an opera or running a marathon (Colarusso, 1993).

Ostow (1987) states that play is "freedom from expectable consequences. Play is an activity that is enjoyed for the moment; after it is over, nothing that has happened is to carry over into the real world" (p. 194). Colarusso (1993) argues that this thought may be basically true but the idea that play is entirely free of expectable consequences is misleading. There is carryover into the real world through the repetition of similar themes in later play, i.e. awarding the trophy to a number one team, discussing scenes from a musical.

In her study of adult play, Hall (1977) found common themes among adult subjects interviewed about play: getting away from everyday concerns or problems; relaxation; comfort; a sense of freedom; ability to be oneself; sharing with a loved one; association with pleasant memories; and pleasant feelings. She concluded that play is an important part of the repertoire of adult human behavior. It meets certain needs not adequately met elsewhere in the adult's life and appears to be a necessary part of maintaining good mental health. Halmo (1985) described play as being influential in reducing stress, providing perspective, enhancing communication in relationships, and encouraging success at work.

Considering success at work through play, Rieber (1996) suggests that there is risk attached to suggesting that an adult is at play. The misconception that the activity of play is irrelevant or inconsequential to either formal or informal learning keeps adults away from play. Visser (1996) observes that children learn using all senses but as we grow up adults begin to learn by memorization using linguistic and logical mental capabilities. She recommends that as trainers of adults, "whole brain" learning should be practiced using multi-sensory training.

It has been suggested by several researchers (Baldwin & Ford, 1988; Goldstein, 1986; Noe, 1986; Noe & Schmitt, 1986) that learning during training is a function of ability plus motivation. Regardless of ability levels, trainees must be motivated if training is to be successful (Clark, et al., 1993). Csikszentmihalyi's Flow Theory of Optimal Experience has been described as "the process of optimal experience" achieved when a sufficiently motivated person perceives a balance between his skills and the challenge of learning.

The name flow theory is derived from the description of extreme happiness and satisfaction expressed by many adults. Being engaged and absorbed in an activity the person seems to "flow" along in a spontaneous and almost automatic manner. It has been summarized as being "carried by the flow" of the activity (Rieber, 1996). Csikszentmihalyi (1990) defines flow as "the state in which people are so involved in an activity that nothing else seems to matter; the experience is so enjoyable that people will do it even at great cost, for the sheer sake of doing it" (p. 4). Adding play to training programs in the workplace has the potential to enable individuals to make quantum leaps in performance while experiencing intense flow states.

Flow is not necessarily easy to achieve. It is contingent upon certain conditions and skills. Rieber (1996) notes that for flow to be experienced a person must have the ability to focus attention, to concentrate without distraction. Csikszentmihalyi places great emphasis on attention by defining it as "psychic energy" because it acts as the "fuel" for the rest of consciousness. When in the flow state, irrelevant thoughts and perceptions are screened out and the learner 's attention is focused entirely on the interaction. Flow thus involves a merging of actions and awareness, with concentration so intense there is little attention left over to consider anything else (Hoffman & Novak, 1995).

Psychological growth is a result of flow because the individual becomes more complex or elaborate. Differentiation and integration are the psychological mechanisms that account for growth. Differentiation is described as the need for the individual to remain unique from others. Integration is depicted as the need to feel connected to other people and other ideas (Csikszentmihalyi, 1990).

Activities that provide enjoyment, not mere pleasure, produce flow. Enjoyment results when an activity meets one of more of the following eight components: 1) our knowledge or skill is just right for coping with the demands of a situation, and when compared to the entirety of daily life the demands are above average, the motivational quality of the experience improves noticeably, 2) we are able to concentrate on what we are doing, 3 & 4) we can be so involved because what we are doing has relatively clear goals and provides rather consistent and unambiguous feedback as to whether one is reaching the goals, 5) involvement removes from awareness, at least temporarily, the worries and frustrations of everyday life, 6) we are not worried about losing control, 7) all feeling of self-consciousness disappear, and 8) our sense of the duration of time is altered.

In order to experience flow the person must be able to match challenge with their current skill or ability level, optimizing challenge. Anxiety will result if the person' s skill is too low and the challenge is too high. Boredom will occur if the challenge is too low and the skill to high. Only when boredom and anxiety are avoided is flow possible.

Csikszentmihalyi's original model (1977) specified that flow occurred when a person perceived an equal match between skill and challenge, both when skill and challenge were equally high and when skill and challenge were equally low. More recent reformulations (Csikszentmihalyi & Csikszentmihalyi, 1988; Csikszentmihalyi & LeFevre, 1989) specify that "flow results from experience contexts characterized by a match between challenge and skills only when both challenge and skills exceed the level that is typical for the day to day experience of the individual" (Ellis, Voelkl, & Morris, 1994). Congruent skills and challenges that lie below the individual's typical level are said to result in an "apathy" state (Csikszentmihalyi & Csikszentmihalyi, 1988).

People move in and out of flow as a function of control, content and motivational characteristics. Investigating flow in Internet consumers, Hoffman and Novak (1995) propose two distinct categories of flow, goal-directed and experiential. Both categories involve congruent skill and challenges but differ in terms of orientation, involvement, motivation, search and benefits.

Designing and delivering training that will invoke the state of flow requires creativity by the educator. Having over sixty definitions, creativity is difficult to define. Torrance (1988) says that "Creativity defies precise definition." Having started in psychology, early research in creativity focused on the creative personality. However, the scope of creativity research has widened to include: the person that is creative, the product of creating, the process of creating, and the place or press (environment) of creating (Nagasundaram & Bostrom, 1993).

The personality of the creative achiever has been described as forceful and enduring (Helson, Roberts & Agronick, 1995). Cox (1926) concluded that "Youth who achieve eminence are characterized not only by intellectual traits but also persistence of motive and effort, confidence in their abilities and great strength or force of character" (p. 218).

A major source of evidence for the consistency and generality of the creative personality is the fact that samples of creative individuals varying in age and working in different fields have been found to share common characteristics (Barron, 1965; Cattell & Butcher, 1970). Although the characteristics have been set forth somewhat differently by each investigator, similar cognitive and motivational attributes recur. MacKinnon (1960) described creative individuals as open to experience, sharing a common pattern of interests. He also attributed the characteristics of independent judgment, assertiveness, and a persistent high level of energy in their work to creative persons.

Nagasundaram and Bostrom (1993) point out that most creativity measuring instruments measure the individual's "creativity level" based on some criteria and all individuals are ranked on a scale. Higher scoring individuals are deemed "more creative" than others receiving lower scores. This approach is problematic when multiple (independent) criteria exist for measuring individuals' creativity. It is difficult to determine the creativity level of an individual who scores high on one instrument but low on another.

Kirton and associates (1976, 1987, 1989) have taken a radically different approach to researching creativity. Viewing creativity as a cognitive style, Kirton asserts that individuals have different "preferred" cognitive creativity styles which are manifest in their varied approaches to formulating and solving problems. Two individuals could be equally creative, but in different ways. In studies replicated in a dozen countries including the US, UK, Australia and countries in Asia and Europe, it has consistently been found that preferred creativity style is a construct distinct from but related to creativity level, which is the more conventional approach to measuring creativity. Kirton identifies two principal preferred creativity styles: adaption and innovation.

> "Adaption is the characteristic behavior of individuals who when confronted with a problem, turn to conventional rules, practices and perceptions of the group to which they belong. . .and derive their ideas towards the solution of the problem from these established procedures. When there is no ready made answer provided by the repertoire of conventional responses, then the adaptor will seek to adapt or stretch a conventional response until it can be used in the solution of the problem.
>
> "Innovation is the characteristic behavior of individuals who, when confronted with a problem, attempt to reorganize or restructure the problem, and to approach it in a new light, free from any of the customary perceptions or presuppositions which would be the conventional starting-point for its solution. Innovators thus produce answers which are less predictable and thereby sometimes less acceptable to the group" (Kirton, 1987, p. 283-284).

Adaptors prefer to do thing better. Innovators prefer doing things differently. Kirton (1987) lists a set of individual traits on which adaptors and innovators tend to differ. Individuals may test to have completely different creativity styles yet be considered equally creative while producing means on either side of the Kirton scale measures. Kirton emphasizes that neither style is necessarily superior to the other, conceptualizing creativity with less originality. While innovators are constantly exploring and creating new opportunities, adaptors are insuring that those are implemented and monitored efficiently.

Lieberman (1977) notes that playfulness is intertwined with imagination and creativity. It is noted that behavior manifests itself at an early age in the play of the young child and becomes personality traits of the player later in life. A sense of humor, as a component of playfulness, may contribute to the type of imaginative processes that result in creative products.

Studying creativity, intelligence and vocational interests (Paramesh & Narayanan, 1976) found that creativity and intelligence had a significant effect on business, executive, persuasive, linguistic, artistic and musical vocational interests. Vocational interests that creativity significantly effected were persuasive, linguistic, artistic, and musical interests. Intelligence had a significant effect only on the artistic interest. Csikszentmihalyi (1988) first observed the "flow experience," which he considered a major gratification of creative work, in artists. The role of intensive practice in expert performance (Ericsson & Charness, 1994) suggests that the strength and endurance of motivation is a major factor in creative accomplishment. Helson, Roberts, and Agronick (1995) found that creative characteristics and achievements endure across the life span with fluctuations in creative temperament during different periods of life.

It has been recognized that motivation to learn is critical for training effectiveness but this variable has largely been a neglected variable in training (Clark, Dobbins, & Ladd, 1993). Without motivation to learn, the most sophicated training program cannot be effective (Noe, 1986). Intrinsic motivation has been found to be linked to playfulness (Webster, et al., 1993; Csikszentimahalyi, 1990).

Educators and trainers must understand the motivation and need to play in the workplace. In these hectic and stressful times, play can provide a much needed relief to employees. Trainers must recognize the importance of incorporating play into educational programs. The creativity of trainers themselves may also lend useful information to help individuals identify their creativity style and to better utilize play in their training in order to enhance flow state.

Future Research Agenda

To help human resource scholars, more research needs to focus on the nature of play that is used in training and development. The importance of flow, evoked during learning, and connection with transfer of training needs to be explored to help trainers and program planners select instructional methods which induce flow states. Instructional methods likely to induce flow states must be identified. Evaluation of learning should also be considered to determine how learners are impacted by the use of play in the classroom. With increasing emphasis on building knowledge, developing creative companies () and learning organizations (Watkins and Marsick, 1993), as a new crucial role for human resource developers in our use of training strategies while invoking creativity, are more important than ever.

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